INDUSTRIAL EQUIPMENT NEWS

SEPTEMBER - 1951
VOL. 19 • NO. 9

The Original IEN FOUNDED 1933

INDUSTRY'S MOST COMPLETE PRODUCT INFORMATION SERVICE

What's New IN EQUIPMENT, PARTS, MATERIALS

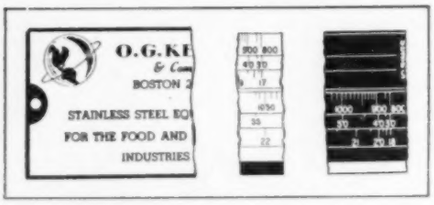
AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

Product Information for specifiers and buyers in all industries

BREVITY—Identify by IEN-8556 if you write the maker

NAMEPLATE . . Stainless steel, carries precision permanent markings

Source: ATEENATE INC.
109-11 Sagamore St., Dept. I, North Quincy 71, Mass.



Stainless steel is treated to produce a black-oxide finish and then is etched in a photo-engraving process to present black markings that stand slightly above the surface of a natural stainless-steel background or a raised background with depressed markings on the stainless steel in manufacture of this new nameplate. The finished work can be exposed to temperatures to 1,700 deg. F. or placed in contact with harsh alkalis, acid solutions, salt spray without loss.

The plates are available in the form of dials, panels, instruction plates, wiring diagrams with equally permanent marking. Sizes are to a maximum of 24 by 48 in. with thickness of 1/64-in. sufficient for most requirements. Cost is comparable with plates made by conventional means when allowance is made for the higher cost of the stainless steel. Designs can be reproduced with photographic accuracy.

The company is prepared to quote on receipt of sample, blueprint, photograph or drawing. It prefers to work from finished artwork. Samples are available on request.

BREVITY—Identify by IEN-8557 if you write the maker

METAL TREATING . . Chemical process to lubricate steel for cold working

Source: PENNSYLVANIA SALT MFG. CO.
1002 Widener Bldg., Philadelphia 7, Pa.

For deep drawing, heading, stamping and extruding

Lubricating surface that is heat resistant and chemically interlocked with the steel is produced by a new chemical process to treat steel prior to cold working. The process consists of cleaning, pickling and application of a phosphate coating and a special lubricant.

Foscoat is the trade name of the process in which immersion, flooding or spraying forms a strong adherent coating chemically bonded to the steel. This coating functions as "host" for Foslub, an organic lubricant designed to react chemically with the Foscoat in addition to being physically adsorbed and absorbed.

The company is prepared to supply technical service including layouts, tool and equipment design, in addition to the cleaner, a rinsing agent, the phosphate-coating chemicals and the lubricant. The first two materials are packaged in 300-lb. drums, the coating chemicals in 30 and 50-gal. stainless-steel containers and the lubricant in 400-lb. drums.

BREVITY—Identify by IEN-8558 if you write the maker

PURCHASING GUIDE . . Available free to Industrial Equipment News readers

Source: THOMAS PUBLISHING CO.
467 Eighth Ave., New York 1, N. Y.

Last call for a free copy

A few copies remain to be alloted from the limited printing of Thomas' Register Jr. and are available in this "last call" to those of you who have not already requested a free copy. We will put your name on the list before all are allotted.

The book is a companion publication to Thomas' Register. It carries 2,400 pages measuring 4 by 10 inches. It lists names, addresses and rating of selected manufacturers under some 50,000 product headings.

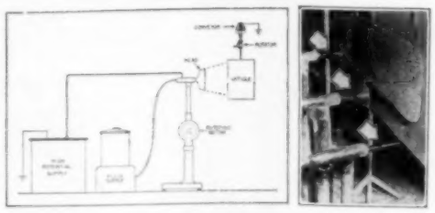
YOUR HELP IS NEEDED

FOR THE COMMUNITY CHEST DRIVE

BREVITY—Identify by IEN-8559 if you write the maker

PAINTING . . Electrostatic equipment needs no air, generates no over-spray

Source: RANSBURG ELECTRO-COATING CORP.
Sanders at Barth, Indianapolis 7, Ind.



Process No. 2 designates new electrostatic equipment which the company is prepared to supply on a rental basis. Installation is by the user in connection with a suitable conveyor, work holders and means for general ventilation, the latter required only for the removal of solvent vapors in the air surrounding the installation.

Operation is featured by electrostatic atomization of the paint in a set-up that requires no compressed air, eliminates over-spray and deposits on the work essentially all of the paint delivered to the spray heads.

The work to be painted is carried by the conveyor which the user supplies to pass in front of an assembly of the new spray heads. They consist essentially of hollow cones mounted for rotating motor drive and supplied with paint at the rear. The paint is metered at a constant rate to each head. Rotation of the head spreads it over the inner surface of the cone so it flows evenly to the outer edge.

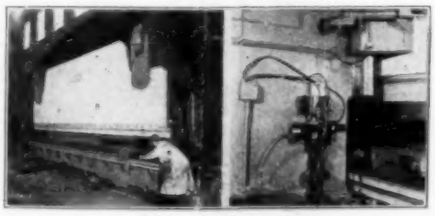
An electrostatic unit supplying high potential has one terminal grounded and its other terminal connected to the head. It creates a strong electrostatic field between the head and the work which also is grounded through its conveyor. The field transforms the material into a spray as it issues from the edge of each cone and pulls the fine charged particles to the grounded work. They deposit on all surfaces evenly and with essentially exact duplication from one work piece to the next. Operation is on 220-volt 60-cycle ac. input.

Brochure, 16 pages, "No. 2 Electrostatic Process", illustrates and describes the equipment and presents data on actual installations with results in work capacity, operating speeds and use of paint, enamel, lacquer.

BREVITY—Identify by IEN-8560 if you write the maker

BENDING . . Hydraulic press rates 1,000 ton, electronic tilt control

Source: VERSON ALLSTEEL PRESS CO.
9301 S. Kenwood Ave., Chicago 28, Ill.



No. H-1000-14 is a new machine in the company's line of hydraulic press brakes. It features electronic tilt control for the ram. The press rates 1,000 ton on 2,000-lb. hydraulic pressure. It has capacity to bend 1-in. mild steel to 16 ft. in length. Its bed measures 20 ft. in length. The stroke is 12 inches. Shut height is 16 inches. Daylight space, with the stroke up, is 28 inches. Depth of gap is 14 in. and clearance between the housing is 14½ feet.

The tilt control employs a cable-suspended barrier that is positioned between a photoelectric cell and a light source on the rear of the housing. Any tilt in the ram raises or lowers this barrier, results in automatic correction through altered speed and direction of oil flow from a transfer pump connecting between the two pressure cylinders. The cylinders are independently powered by separate matched pumps driven by a 100-hp. motor. The reversible transfer pump employs a 3-hp. dc. motor supplied by a 3-kw. G. E. amplidyne generator.

The photo-cell and light source can be raised and lowered with reference to the target for mechanical adjustment of the ram tilt. The electronic equipment operating the transfer pump will maintain this tilt position throughout the stroke of the ram to a tolerance within 0.001 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

PRODUCT INFORMATION IS MORE VITAL NOW THAN EVER

WHAT DO YOU NEED?

READER SERVICE FORM . . Look between pages 16 and 17 or 100 and 101 and "lift" the form you find there. Keep it beside you as you look through the pages. Note on it the numbers of the products on which you want further information. Then either mail it to us, so we can forward your requests to the manufacturers, or use it as your guide to write direct.

From a Project Engineer

"My IEN is distributed to 15 engineers who are constantly in search of new components and new fabrication techniques for rocket engine development."

Departments

READER SERVICE FORM — Pages 16-17 and 100-101
To assist you in securing the information you want

SUBJECT INDEX — Pages 113-115
With our four-step suggestion on how to use it

USEFUL INFORMATION — Page 4
Summary of that offered by advertisers in this issue

NEWS NOTES — Page 24
Reviews of unusually helpful literature and services

NEW LITERATURE — Page 78
Condensed reviews of current manufacturers' catalogs

"I WISH I HAD" — Page 116
Requests we cannot answer, printed in the hope you can

Our Selections in This Issue

ADHESIVE — Page 77
For wood, plastics, rubber, primed metal, textiles

CLAMP — Page 7
Applies in hole to secure sheet metal for riveting

CUTTING — Page 10
Book on how to make and use carbide cutting tools

DRIVE — Page 102
Variable control for ½ hp. dc. motor from ac. line

ELECTRIC POWER — Page 25
Catalog of sound films on electric power, products

FEEDING — Page 65
Reciprocating machine meters forgings to a furnace

NICKEL ALLOY — Page 109
Contains chromium and iron to conserve scarce nickel

PLASTIC — Page 3
Edge lighting sheet for panels, name plates, dials

RECORD KEEPING — Page 26
Suggestions on Controlled Materials Plan procedures

TESTING — Page 17
Magnetic outlets finder for underfloor raceway

TESTING — Page 69
Constant temperature bath, minus 5 to plus 107 deg. C.

WEIGHING — Page 2
Electronic scale actuated by Baldwin load cells

W. E. Smith, Editor & V. Pres.
F. Morse Smith, V. Pres. in Charge

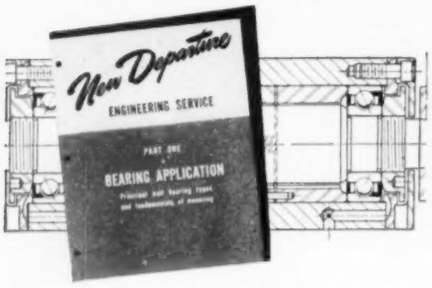
THOMAS PUBLISHING COMPANY
461 - 8th Ave., New York 1, N.Y.—LOngacre 3-1546

HELP TO CONSERVE PAPER
MAKE THIS ISSUE DO DOUBLE WORK
FILL IN AND SEND ALONG TO OTHERS
INTERESTED IN PRODUCT INFORMATION

- ☐ *Plant Operating Mr.* _____
- ☐ *Production Mr.* _____
- ☐ *Engineering Mr.* _____
- ☐ *Product Design Mr.* _____
- ☐ *Purchasing Mr.* _____
- ☐ _____

BREVITY—Identify by IEN - 8561 if you write the maker

A GUIDE to approved BEARING APPLICATION



It treats of such fundamentals of ball bearing application as: General mounting rules; bearing creep; effects of press fits on preloading, of preloading on housing fits, on bearing life; radial bearings mounted opposed; shields and seals; use of duplex bearings; one-bearing double row mounts, etc., etc.

Ask for booklet BA. New Departure, Bristol, Connecticut.

Nothing Rolls Like a Ball. . .

NEW DEPARTURE

BALL BEARINGS

BREVITY—Identify by IEN - 8562 if you write the maker

FREE! 32-PAGE HANDBOOK

SHOWS HOW TO STOP CONDENSATION DRIP

NoDrip

Stops Drip from:
- ✓ Cold water pipes
- ✓ Water filter tanks
- ✓ Metal or concrete ceilings
- ✓ Basement walls
- ✓ Condensers
- ✓ Air Ducts
- ✓ Blower pipes
- ✓ Dust Collectors
- ✓ Crystallizers

Learn how you can control condensation drip from pipes, tanks, ceilings—from metal, wood or masonry surfaces.

LOW COST — EASY TO APPLY

Anyone can apply NoDrip, the triple-duty insulation type coating. Brush it on or spray it on. Use it on pipes or equipment where temperature differences cause condensation. Save money by preventing rust and corrosion. Deaden sound, decrease vibration on metal ducts or pipes.

HANDBOOK SHOWS HOW

Send today for your copy of the NoDrip HANDBOOK which tells what this plastic-cork material can do for you. It's the modern solution to condensation drip problems.

Send for your Free Handbook Now!

J. W. MORTELL CO.

Technical Coatings Since 1895

Dept. IE, Kankakee, Ill.

BREVITY—Identify by IEN - 8563 if you write the maker

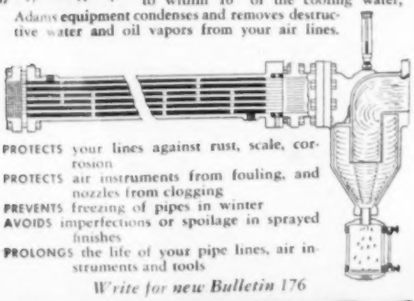
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator

with **ADAMS Aftercooler and Cyclone Separator**

• Reducing compressed air temperature to within 10° of the cooling water, Adams equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 176

R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

BREVITY—Identify by IEN - 8564 if you write the maker

PACKAGING . . Semi-automatic machine to sort, grade, tabulate, package eggs

Source: FOOD MACHINERY & CHEMICAL CORP. 3073-77 12th St., Riverside, Calif.

The sorting section over which eggs are fed to the company's new Sneed equipment is shown in the illustration. This portion of a complete installation to sort, package and tabulate results moves the eggs for delivery six at a time to a transverse conveyor which, in turn, delivers them one at a time to a continually revolving basket assembly in a sizing mechanism. This mechanism can be adjusted for a tolerance of 1/32 to 1/64 oz. for each of four desired sizes.

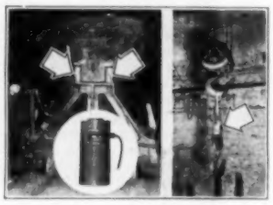
The eggs ride in baskets in the mechanism. These baskets deposit them in the correct size-selecting channel on a neoprene belt and feed them into the proper position by sizes to a candler's tray on the opposite side of the barrier shown in the illustration. Operation continues on the opposite side of the barrier until the eggs are in their containers.

Capacity of the machine is limited only by the ability of the candlers to grade the eggs. It actually can deliver as many as 80 cases per day. A good operator can grade between 45 and 50 cases per day.

BREVITY—Identify by IEN - 8565 if you write the maker

WEIGHING . . Electronic scale actuated by Baldwin load cells

Source: STREETER-AMET CO. 4103 N. Ravenswood Ave., Chicago 13, Ill.



Ametron trade names a new electronic weighing scale. It is a combination of Baldwin strain-gage load cells, previously described IEN - 4139-51, and electronic amplifying indicating and recording equipment for location at a remote point. The strain-gage load cells apply at the load in tension or in compression. The remote electronic equipment is connected electrically and can record and print on a ticket or tape.

Slight variation in length in the load cell due to compression or tension results in length change in the strain gage which forms one leg of a Wheatstone bridge. This unbalances the bridge circuit and provides the minute voltage that is amplified and employed to operate the recorder.

Four load capacities at the cell are maximum at 500 to 50,000 pounds. The smallest cell unit measures 3 in. in diameter by 4 in. in housing length. The largest measures 5 by 10 inches. The company is prepared to apply the equipment to meet specified conditions on tensile or compressive loads.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8566 if you write the maker

FOR EASY SHIFTING OF HEAVY EQUIPMENT

DUFF-NORTON *Traversing Bases*

Heavy machinery and equipment can be shifted with ease by means of Duff-Norton Traversing Bases. Used with or without screw and ratchet type jacks, loads can be moved horizontally up to 26". You should have a set of these bases in your plant. Investigate the savings they make possible.

HOLDS AND MOVES LOADS UP TO 100 TONS

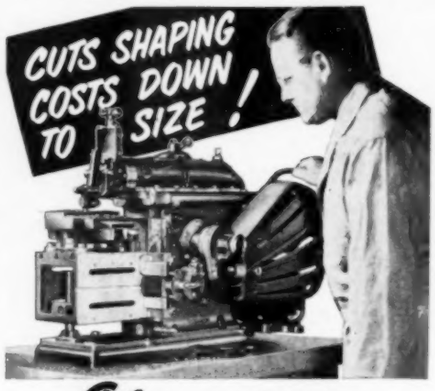
Write today for Bulletin AD-4G.

THE DUFF-NORTON MANUFACTURING CO.

Main Plant and General Offices: PITTSBURGH 30, PA.—Canadian Plant: TORONTO 6, ONT.

"The House that Jacks Built"

BREVITY—Identify by IEN - 8567 if you write the maker



Atlas 7" SHAPER

Easier to set up . . . cheaper to operate . . . dependably accurate . . . that's the record of Atlas in thousands of plants.

On any operation within its capacity it will save money.

Atlas was the *first* 7" shaper and *no one yet has matched its sound construction features, performance, or value.* Send for detailed catalog. Compare it feature for feature. See for yourself.

50 YEAR Atlas

ATLAS PRESS CO.
991 N. PITCHER ST.
KALAMAZOO, MICHIGAN

BREVITY—Identify by IEN - 8568 if you write the maker

PACKS A Wallop!

KNOCK fire out in seconds with this Kidde CO_2 extinguisher. Just point . . . pull the trigger . . . and the fire's out! Write for free literature.

Walter Kidde & Company, Inc.
936 Main Street, Belleville 9, N. J.

Kidde

BREVITY—Identify by IEN - 8569 if you write the maker

Your practical guide to better pipe and tube joining

BULLETIN No. 17 has all the information you need to make strong, leak-tight, low-cost pipe and tube assemblies and repairs with EASY-FLO and SIL-FOS, the modern low-temperature silver brazing alloys. It shows approved methods of cutting and fitting—cleaning—fluxing—heating and flowing the alloys.

WRITE FOR YOUR FREE COPY TODAY.

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.

BREVITY—Identify by IEN - 8570 if you write the maker

A PAID NEWS ADVERTISEMENT BY RIGIDIZED METALS CORP.

FREE MANUAL . . on conservation of strategic metals

Producing more units per pound of metal is a necessity under today's conditions.

Conserving strategic alloys and reducing weight with increased strength are the main subjects of this eight-page manual. Detailed case histories show how substantial savings of material and appreciable reductions in unit weights were made possible by the use of Stainless Rigidized Metal.

Drawings and illustrations give you the result of comparison tests for rigidity, buckling strength, impact strength and tensile strength between Rigidized Metal and plain sheets. These tests show you why Rigidized Metal is a better metal for your product, be it for the military or civilian market. Over one hundred suggested applications are listed. They cover every industry and market, so you will readily see where you can benefit.

Photographs of eight popular patterns are shown with the maximum pattern depth for each one. You can see at a glance the versatility available with Rigidized Metals.

Just write IEN—into your reader service form with this issue of Industrial Equipment News or note the number on your letter to us. If you have a specific problem at this time, write direct and tell us what you have in mind. We can then give you specific data and a sample or two of Rigidized Metal.

Rigidized Metals Corporation

664 OHIO STREET, BUFFALO, N. Y.

BREVITY—Identify by IEN - 8571 if you write the maker

a good appliance deserves the BEST CORD

SECURITYFLEX

portable cord

Tough, dependable—resistant to oil, water, abrasion, age, ozone—SECURITYFLEX* Portable Cord is a reliable partner for any electrical appliance. So rugged it is used on mine drills.

Resists kinking. Flexes indefinitely. Don't risk your product's performance by using poor cord. SECURITYFLEX is made by Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

*Reg.

the right cable for the job

ANACONDA® Wire and Cable

BREVITY—Identify by IEN - 8572 if you write the maker

NO "JACK KNIFE" ACTION HERE

—You cut with full hydraulic control

Users report several times longer blade wear with the W. F. Wells saw. Easy to see why, too! Here's a unit that feeds down EVENLY on the job—fully supporting its blade. You can select and hydraulically control BOTH speed of descent and blade pressure. Perfected by the pioneers in band saw manufacturing, these units will speed your production . . . reduce your cut-off costs.

WRITE TODAY for complete literature covering bar feeds, coolant systems, and other accessories.

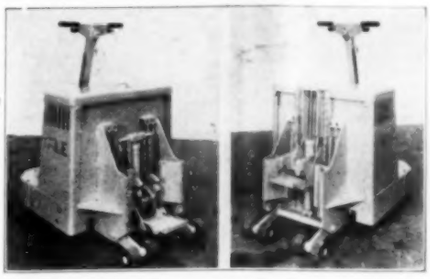
W. F. WELLS & SONS

Three Rivers, Michigan

BREVITY—Identify by IEN - 8573 if you write the maker

TRUCK . . Electric tractor grips to push or pull a trailer

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.



Grip-Tow trade names new assembly of the company's standard hand or motorized hand-lift trucks that includes a gripping mechanism to engage the end of a caster equipped truck and lift its own trailer wheels clear of the floor after engagement has been secured. The tractor and the truck then become a rigid unit with the fixed axle on the truck the turning point for maneuvering either forward or reverse.

Controls on the steering handle, beside which the operator walks, provide for movements of the tractor and for gripping and releasing action on the truck trailer. Release of the connection is accompanied by return of the small tractor wheels to the floor so the tractor unit comes away as a self-supporting mobile assembly.

BREVITY—Identify by IEN - 8574 if you write the maker

PLASTIC . . Edge lighting sheet for panels, name plates, dials

Source: SIERRA PRODUCTS CO.
1630-34 E. Compton Ave., Compton, Calif.

For aircraft equipment instruments

Transparent plastic forming the center core of the company's new Sierracin-5005 instrument-panel sheet is coated on the rear face with opaque white and on the front face with opaque black. The material is available in sheets measuring 22 by 24 in. by 3/16 in. in thickness. The coatings are 0.005 and 0.004 in. respectively. List price is $10 per square foot.

Markings are produced by engraving through the black surface and slightly into the transparent center core. The letters are then filled in with Sierracin-W7C translucent white plastic. This material is allowed to cure and the panel is then washed with a lacquer thinner. The markings stand out in white on the black background for daylight visibility. They show red in the darkness when small red lights are turned on.

The lights are placed in the panel in various locations in an arrangement that employs their sockets to hold the panel on an instrument board and that provides for lamp replacement from the front. The panel and its face coatings are integrally molded into a single sheet to eliminate the possibility of delamination. The material itself is not subject to crazing in service.

The panel remains serviceable in temperature to 240 deg. F. It is machinable and can be formed to various shapes by heating to 240 deg. F. for 30 minutes and then forming over rubber-covered blocks of wood or plastic.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8575 if you write the maker

SAFETY EQUIPMENT FOR ALL INDUSTRIES

Time Saving on Maintenance

IPCO

WINDOW PLATFORM

for

WINDOW WASHERS • PAINTERS GLAZERS • OTHER WINDOW MAINTENANCE MEN

Rests on outside sill and is held firmly in position by means of adjustable, telescopic steel tube on the inside. Each platform tested for 500 pounds. Collapses compactly. Guard rail 34" high. Weight 32 pounds . . . APPROVED BY THE PENNSYLVANIA DEPT. OF LABOR & INDUSTRY

Write for Bulletin F-91

IPCO *Safety Equipment for all Industries*

INDUSTRIAL PRODUCTS COMPANY

2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

BREVITY—Identify by IEN - 8576 if you write the maker

LUBRICATION ECONOMY

LUBRIPLATE LUBRICANT

Increased Bearing Life from 2 Weeks to 2 Years!

So says The Globe Company, manufacturer of meat processing machinery. "In the packing industry where animal acids and moisture quickly destroy anti-friction bearings lubricated with conventional lubricants, LUBRIPLATE prolongs the life of bearings from 2 weeks to 2 years."

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

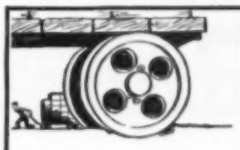
Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 5, N. J. Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

BREVITY—Identify by IEN - 8577 if you write the maker



IN A Rut?

DON'T LET WORN FLOORS SLOW UP PRODUCTION!

A *real* heavy-duty floor must be concrete—*good* concrete. 'Incor' 24-Hour Cement assures stronger, longer-lasting, heavy-duty concrete floors—by curing THOROUGHLY in 24 hours, instead of a week or more.

Don't let worn-out floors slow production—rebuild floors over a week-end with 'Incor'*—no plant tie-up—no time-loss!

Write for booklet, "Heavy-Duty Floors"—address Lone Star Cement Corporation, 100 Park Avenue, New York 17.

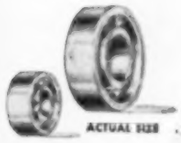
*Reg. U.S. Pat. Off.

LONE STAR CEMENT CORPORATION

Offices: Abilene, Tex. • Albany, N. Y. • Bethlehem, Pa. • Birmingham • Boston Chicago • Dallas • Houston • Indianapolis • Kansas City, Mo. • New Orleans New York • Norfolk • Philadelphia • Richmond • St. Louis • Washington, D. C.

BREVITY—Identify by IEN 8578 if you write the maker

The Practical Solution to Your Small Bearing Problems...



NORMA-HOFFMANN Small BEARINGS...

When designs call for *small* bearings, *specify* and *use* Norma-Hoffmann Small Bearings. These small precision bearings are engineered to give efficient, trouble-free service for years on end. They are extra quiet in operation . . . require little if any maintenance . . . improve the performance of the product.

Write for catalog describing these *small* bearings as well as other Norma-Hoffmann Bearings. They are available in a wide range of types and sizes from 1/8" to 22 1/8" bore.

NORMA-HOFFMANN Precision BEARINGS

BALL • ROLLER • THRUST

NORMA-HOFFMANN BEARINGS CORPORATION
STAMFORD, CONN.

BREVITY—Identify by IEN - 8579 if you write the maker

"...as inevitable as death and taxes"

Sooner or later you will switch to MOLYBDENUM High Speed Steels

It is inevitable, and fortunately, it is easy, so why not change now? This has been going on, on a merit basis, for years.

Our booklet (below) gives you all the practical facts you need to make the switch. You can save money; you will help the national effort by conserving tungsten for uses in which it is really needed. Above all, you will get a tool which is every bit as good as a tungsten type—many people think better!

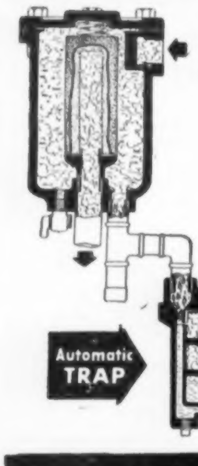
All the facts you need in this FREE BOOKLET

Climax Molybdenum Company
500 Fifth Avenue · New York City

HS-9

BREVITY—Identify by IEN - 8580 if you write the maker

Poro-Stone Filtration FOR COMPRESSED AIR



EFFICIENTLY REMOVES OIL, WATER PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data—Bulletin 176.

R. P. ADAMS CO., INC.
219 E. Park Dr., Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

BREVITY—Identify by IEN - 8581 if you write the maker

CRANE *quality unions*

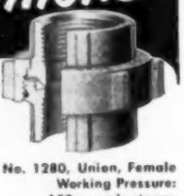
OFFER MORE THAN STRENGTH

Crane Malleable Iron Unions and Union Fittings . . . amply reinforced at stress points . . . have more than mere strength to recommend them.

They're light in weight with minimum overall dimensions. Generous size lugs give good wrench grip.

You can take them down repeatedly without affecting strength or tightness. Ground joint brass to iron seat holds pressure easily. Underwriters' approved for hazardous liquids.

Ask your Crane Man about them, or SEE YOUR NO. 49 CRANE CATALOG.



No. 1280, Union, Female Working Pressure: 150 pounds steam; 300 pounds cold services. Sizes: ¼ to 3 in.

No. 1282, 90° Elbow Female Union Sizes: ¼ to 2 in.

CRANE CO., 836 S. Michigan Avenue, Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

EQUIPMENT FOR EVERY PIPING SYSTEM

CRANE

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

INDUSTRIAL EQUIPMENT NEWS

CCA · The Original IEN Founded 1933 · SBME · NBP

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461 Eighth Avenue, New York 1, N. Y.

What's New · EQUIPMENT · PARTS · MATERIALS

Vol. 19 SEPTEMBER, 1951 No. 9

Useful Information

Leaf through with us as we check the advertisements in this issue. We are looking for headlined offers of printed material of the type we like to call "useful information." It differs from product-descriptive literature by going beyond straight presentation of a product.

It deals in functions served by industrial products as well as in their physical characteristics. It makes how-to-do-it suggestions. It gives warning of things to avoid. It summarizes experience of the manufacturers themselves, experts in their respective subjects.

We have sought out this type of information specifically through most of our eighteen IEN years. We have used the information itself to answer a great many reader questions. We are happy to add that we have "sold" the idea to several manufacturers who asked our suggestions for their customers and prospects.

Let's start at the front and list by page number, manufacturer and subject—

Page	Manufacturer	Subject
2	New Departure	Bearings
2	J. W. Mortell	Thermal insulating
2	Handy & Harman	Brazing
3	Rigidized Metals	Strengthened metals
4	Climax Molybdenum	Tool steels
6	Carpenter Steel	Tool steels
7	Leeds & Northrup	Process control
7	Chain Belt	Chain
9	Cleveland Worm & Gear	Speed reducers
9	Farval	Lubricating
13	American Lumber	Treated lumber
13	Smooth-On	Sealing
19	Western Precipitation	Dust collecting
19	Peter A. Frasse	Stainless steels
20	Johnson Bronze	Bearings
24	Oakite Products	Cleaning materials
33	Ex-Cell-O	Drill bushings
33	Allis-Chalmers	Metal detecting
36	Open Steel Flooring	Grating
41	Vascoloy-Ramet	Carbide tools
42	Libbey-Owens-Ford	Glass
47	Invincible Vacuum Cleaner	Flux recovery
54	Fenwal	Thermostats
56	Allied Radio	Electronic parts
60	Universal Metal Hose	Metal hose
64	Fafnir Bearing	Bearings
72	Thomas Laughlin	Wire rope fittings
76	Honan-Crane	Oil conditioning
81	Unistrut Products	Structural framing
83	Drying & Concentrating	Drying
84	Remington Rand	Production control
85	Norton	Tool grinding
91	Eastman Kodak	Printing papers
92	Aluminum Company	Painting
94	Spraying Systems	Spray nozzles
102	Minneapolis-Honeywell	Pyrometers
106	Minneapolis-Honeywell	Process control
112	Cerro de Pasco	Matrix alloys

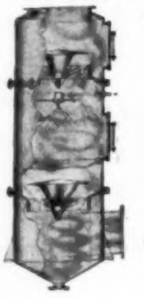
Collect this particular material. Assemble it under appropriate subject headings. Keep it separate from your regular product catalog files. You will find yourself in possession of a remarkably valuable library of practical contructive information ready to put to use on many a plant and product improvement.

W. E. Irish.

BREVITY—Identify by IEN - 8582 if you write the maker

HIGH EFFICIENCY DUST CONTROL with DUCON WASHERS

• Afford the most economical and efficient control and wet suppression of dust and fumes because of superior design and unique features.



• In addition to use for washing of air and gases, DUCON Centrifugal-Wash Collectors are ideal for many other applications, such as: gas absorption, condensation of solvents, heat exchange, distillation and chemical reactions.

• Assure collecting efficiency up to 99%. No secondary dust problem. No moving parts, therefore practically no maintenance. Retains constant air capacity. Eliminates fire and explosion hazards. Can be used in high temperatures.

• Construction steel plate, electrically welded. Easy accessibility to all internal parts. Built for simplified installation.

Write for descriptive, illustrated Bulletin CW48-1.

The DUCON Co.
MINEOLA, N. Y.

BREVITY—Identify by IEN - 8583 if you write the maker

LOAD CARS FASTER, EASIER *with the* S-A SWIVELOADER

Powerful centrifugal thrower unit loads dry granular bulk materials up to 2" size into the far corners of box cars. One man operates loader without entering car. . . eliminates hand trimming. Handles 40 to 80 TPH depending on weight and nature of material.

For complete details on the SWIVELOADER, write for a copy of bulletin 1046.

STEPHENS-ADAMSON MFG. CO.

Tellevel—Bin Level Controls · Car Loaders · SealMaster Ball Bearings · Car Pullers · Winches · ChangeMaster Variable Speed Reducers · Saco Speed Reducers

231 RIDGEWAY AVE., AURORA, ILL.

BREVITY—Identify by IEN - 8584 if you write the maker

6 REASONS why American industry specifies **WIGGINS**

★ *Craftsmanship*
★ *Integrity*
★ *Uniformity*
★ *Low pressure drop*
★ *Leak proof seal*
★ *Engineering Service*

Over many years, Inst-O-Matic has acquired a value far above its mere mechanical qualities, a value proved by its acceptance throughout industry and in all branches of the armed services.

EQUIPMENT MANUFACTURERS

Users' experiences prove conclusively that this design stands up longer under extreme pressure and vibration, and rarely requires replacement. Inquire today.

Basic Sizes: ¼", ½", ¾"; intermediate sizes where needed. Unconditionally guaranteed leak proof from zero to maximum recommended pressure.

Wiggins

For proof of performance, write for name of nearest representative to E. B. WIGGINS OIL TOOL CO., INC., 3424 E. Olympic Blvd., Los Angeles 23, Calif.

INST-O-MATIC COUPLINGS

BREVITY—Identify by IEN - 8585 if you write the maker

5 ways to use LOVEJOY VARIABLE SPEED PULLEYS

FOR QUICK PRODUCTION CHANGES

Speedability of different operators
Variation in size of parts or stock
Variation in temperature or humidity
Variation in size or density of materials
Changes in production schedules

No Stops for Speed Changes.

Easily installed with any equipment new or old. Fingertip control. Available from fractional to 8 H.P. duties.

SHIPPED FROM STOCK

Write for complete catalog today

LOVEJOY FLEXIBLE COUPLING CO.

5014 W. LAKE STREET CHICAGO 44, ILLINOIS

Also mfrs. of Lovejoy Flexible Couplings and Lovejoy Universal Joints

BREVITY—Identify by IEN - 8586 if you write the maker

DESIGNED— for quiet, dependable operation

SEALMASTER BALL BEARING UNITS

- Pillow Blocks
- Take-Up Units
- Flange Units
- Cartridge Units
- Flange Cartridge Units

Self-Aligning—Exclusive design permits shaft misalignment in any direction, without distortion of seal.

Permanent Seal—Patented centrifugal seals exclude dirt and retain lubricant.

Pre-Lubricated—SealMasters are shipped with lubricant sealed in—ready to use.

No Housing Wear—Patented locking pin positions unit for relubrication and prevents rotation of outer race in housing.

Write for Catalog 845

BEARING DIVISION

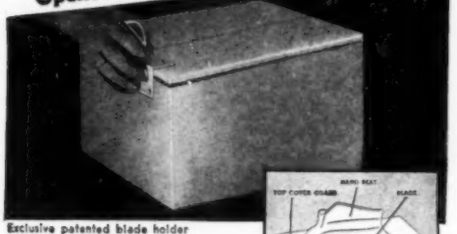
STEPHEN S-ADAMSON

Factory Representatives and Dealers in All Principal Cities

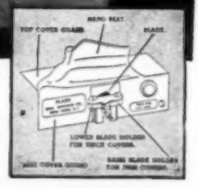
BREVITY—Identify by IEN - 8587 if you write the maker

Amazing FLASH BOX OPENER

Opens Any Carton Quicker . . . Cleaner



Exclusive patented blade holder adjustable to varying thicknesses of carton covers.



THE ONLY CARTON OPENER THAT GIVES YOU ALL THESE ADVANTAGES:

Penetrates exactly under the outer cover thickness • Protects contents of carton • Cuts clearly to permit re-use • Prevents accidents • Saves time • Eliminates fatigue. *Already accepted by leading industries.*

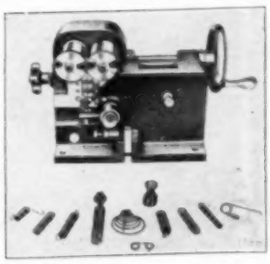
Retail Price $1.75

FLASH BOX OPENER CO., Inc.
52 W. Houston St. • New York 12, N. Y.

BREVITY—Identify by IEN - 8588 if you write the maker

WINDING . . Spring making machine winds coil springs by hand crank drive

Source: CONNORS & DAVIS SALES CORP.
751 Circuit Ave., West Springfield, Mass.



Two rollers at the top of this new Perkins machine are geared together and are operated by a hand crank to drive wire downward from a supply coil so it passes through an adjustable guide to contact a coiling point against which it turns to form a spring. The coiling point is adjustable in relation to the guide and can be changed while the wire is feeding against it to change the winding diameter.

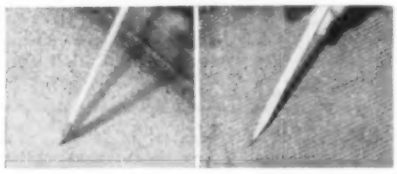
At the same time a shoulder piece can be moved axially outward or inward to deflect the wire as it comes from the coiling point, thus establishing a desired variable pitch. This can be regulated while the spring is being wound to form closed coils at either end so a number of springs cannot tangle. A separate tool can be employed to form a loop at the spring end.

List price is $295 with three wire guides, three wire-feed rolls and two coiling points. The machine will handle wire stock from 0.005 to 0.125 in. for spring diameters to about 1½ in. maximum, or more on special adjustment. Base dimensions of the new machine are 8 by 14 inches.

BREVITY—Identify by IEN - 8589 if you write the maker

SCREENING . . Heater attachment assists in processing moist materials

Source: F. R. HANNON & SONS
1620 Waynesburg Road S. E., Canton 7, Ohio



Wet sand, coal, lime, ore, chemicals can be handled efficiently by new or old gravity or vibrating-type screens when they are equipped with this new electric heater attachment. It applies on any equipment employing woven-wire screen of No. 2 mesh or smaller. It heats the screen just enough to reduce moisture content so the material will pass through the mesh without "blinding."

The equipment employs a step-down transformer to convert 220, 440 or 550-volt ac. to low-voltage heating current which is delivered through cables to special buff bars that extend the full length of the screen on each side. The screen then acts as a resistor and is heated to the desired temperature.

Installation requires no special preparation, can be made in a few hours. An unheated clogged screen handling wet material is shown to the left in the illustration. The same screen handling the same material after heat has been applied is shown to the right. The pencil indicates free mesh.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8590 if you write the maker

TROMBETTA SOLENOID CO.
331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.

SB-373 SHOE BRAKE
10" WHEEL, 5" FACE, 450 FT.-LBS.

SB-300 LINE OF BRAKES
TORQUE 3 TO 16500 FT.-LBS.

B-100 LINE OF DISK BRAKES
TORQUE 10 TO 25000 FT.-LBS.

EIGHT LINES OF SOLENOIDS
RECIPROMOTORS AND SEMOTORS

BREVITY—Identify by IEN - 8591 if you write the maker

OFFERS YOU OVER 15,000 TYPES, SIZES AND RATINGS OF ELECTRIC HEATERS FOR ALL YOUR NEEDS

FAST • EFFICIENT • ECONOMICAL • EASY TO INSTALL

This Booklet Shows You How To Save Money with Electric Heat

It's packed with ideas you'll find useful.

Get your copy now!

Regardless of your heating problems, there are Chromalox Electric Heaters that give you the heat you want when you want it. Compact Chromalox Units provide dependable, around the clock service; they are easily installed in existing or new equipment. Operating temperatures can be quickly regulated manually or thermostatically to fit the work requirements in your plant.

10-10

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Chromalox Electric Heaters Advertisement, Page 11

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 8592 if you write the maker

300 Bends Per Hour with NEW Semi-Automatic PINES BENDING MACHINE

SAVES TIME, CUTS COSTS ON SHORT RUN, PRODUCTION, MAINTENANCE WORK

SPECIFICATIONS
PINES SERIES 1400 BENDER

- Maximum Capacity—1" O.D. 16 ga. steel tube.
- Maximum Radius of Bend—8½" to centerline.
- Length of Tubes—Up to 5 ft. standard.
- Bending Speed—29 R.P.M.
- Working Height—35".
- Overall Size (Floor Space)—3' x 7'.
- Pressure—1000 P.S.I.
- Pump Motor—3 H.P.
- Pump—7 G.P.M. (Vickers).
- Optional—Adjustable gages . . . provision for any length of tube, mandrel for conical bends.

Fast, Easy to Operate—Forms Smooth, Neat Bends Quickly

Eliminates many slow, tedious hand bending operations. Is especially designed to cut costs on work formerly considered too variable for fully automatic equipment. Fast and easy for one man to operate. Hydraulic bending arm forms smooth, neat-looking bends quickly. Clamp and die rollers (or sliding dies) are operated by hand toggle levers. Hand wheel provides immediate angle-of-bend selection. *Typical production:* 300 bends per hour on 1"-16 gage steel tube.

Ask for An Analysis of Your Bending Problems

Write today for free literature. Find out how a Pines Bender can be applied to your work. *Ask for an analysis of your bending problems.* There's no obligation.

PINES ENGINEERING CO., Inc.
Specialists in Tube Fabricating Equipment
633 WALNUT AURORA, ILLINOIS

BREVITY—Identify by IEN - 8593 if you write the maker

TAKE ADVANTAGE of the inherent benefits of the *Curvacore* transformer and save money. The *Curvacore* transformer combines the wound-type core with new insulation techniques. Result: a smaller and more compact core with all-around improvements which will increase operating economies.

In addition to *Curvacore* transformer design benefits, you still get *Spra-Bonderized* tanks with a highly protective 3-coat baked-on finish of alkyd-resinous paint, simplified high-voltage angle bushings with handy chuck-type connectors, sturdy tank construction and high quality craftsmanship throughout.

For more information about this new efficient transformer ask for Bulletin 61B7641. Allis-Chalmers, Milwaukee 1, Wisconsin. A-2490

Curvacore is an Allis-Chalmers trademark.

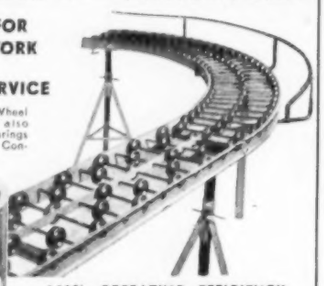
ALLIS-CHALMERS

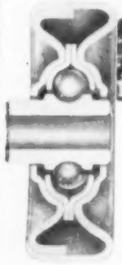
BREVITY—Identify by IEN - 8594 if you write the maker

METZGAR WHEEL & ROLLER CONVEYORS

BUILT FOR HARD WORK and LONG SERVICE

Complete Wheel Assembly also used as Bearings in Roller Conveyors.





100% OPERATING EFFICIENCY BALL BEARING THROUGHOUT

Metzgar construction features wheels and rollers that spin on full ¼" steel balls (Hoover or equal) in the famous Metzgar Labyrinth Ball Race. Factory-lubricated for life.

Get most for your money in a Metzgar "Maintenance-Proof" Conveyor.

WRITE FOR FOLDER NO. 1251

METZGAR CO.
417 Douglas N. W.
GRAND RAPIDS 4, MICH.

BREVITY—Identify by IEN - 8595 if you write the maker

FOR CONSTANT SERVICE

When each trolley wheel carries its share of the load in perfect alignment with the craneway tracks and all possible friction is eliminated, the result is perfectly articulated trolley travel.

Applied to American MonoRail Cranes, these articulated trolleys permit constant operation—handling loads up to 10 tons. And with this is offered all the flexibility of MonoRail design for interlocking carrier service between and beyond the craneways.

Let an American MonoRail engineer explain all the advantages of these new cranes, or write for complete information.

THE AMERICAN MONORAIL COMPANY
13111 Athens Avenue • Cleveland 7, Ohio

BREVITY—Identify by IEN - 8596 if you write the maker

ALL INFORMATION, METHODS, AND IDEAS NEEDED TO PRODUCE *BETTER TOOLS AND DIES*

Practical Data on Popular Analyses of Tool Steels, their Selection, Heat Treatment, and Use

in the Revised, Enlarged SIXTEENTH PRINTING of this

TOOL and DIE STEEL HANDBOOK

By Palmer and Luerssen

Here's the BOOK OF ANSWERS for every man responsible for tools and dies. Shows you how to increase your company's production from present equipment—how to reduce toolmaking trial and error, conserve tool steel, avoid die troubles, simplify heat treatment. Gives complete working information on everything from selection of the right steel to heat treating methods and equipment, hardness and toughness testing, latest data on high speed and hot work steels. 564 pages, 355 charts, photos, diagrams give you facts on: how design affects heat treatment, hardenability tests, time required to heat different tools to required hardening and drawing temperatures, furnace atmospheres, quenching, tempering, trouble-shooting.

INCLUDING 80-PAGE ALPHABETICAL SELECTOR, BOUND RIGHT IN THE BOOK, SHOWING WHICH STEEL TO USE FOR ALMOST EVERY TOOL AND DIE. Use this book to train new men and upgrade skilled men.

OVER 100,000 COPIES IN USE! CLIP AND MAIL NOW

THE CARPENTER STEEL CO. • READING, PA. • DEPT. BX-2

Please send me, postpaid, your revised "Tool Steel Simplified". I enclose $2.00 ($2.50 outside U.S.A.) in full payment of the book.

NAME _____ TITLE _____
FIRM NAME _____
MAILING ADDRESS _____
CITY _____ STATE _____
(Please print)

BREVITY—Identify by IEN - 8597 if you write the maker

FLOORS . . Steel dock board spans between freight car and platform

Source: ELIZABETH IRON WORKS INC.
P. O. Box 360-A, Elizabeth, N. J.

New design of the company's 7½-ton steel dock board, known as the "One Man Bridge Ramp" employs locking slides on the floating side arms to position the unit securely between a freight car or truck and the edge of a loading platform. These members remain parts of the arms, do not come away from it as in the original design.

Sizes are available to span gaps from 5 to 58 in. with height differential to 7 inches. The riding surface is a non-slip steel plate reinforced with shock plates at the corners. Side members add rigidity and act as guards. Two hooks are recessed into the top surface to carry the unit from one location to another on the forks of a lift truck.

BREVITY—Identify by IEN - 8598 if you write the maker

CORROSION PROOFING . . Liquid, colorless, for finished metal surfaces

Source: MINNESOTA MINING & MFG. CO.
409-13 Piquette Ave., Detroit 2, Mich.

EC-1111 to brush
EC-1139 to spray

Colorless film through which polished metal surfaces show clearly is produced by brush or spray application of a new resin-base liquid. It is known as Formula EC-1111 for air drying and Formula EC-1139 for forced drying at 275 deg. F. for about 30 minutes.

Initial development was to protect finished mufflers, grills, moldings on motor vehicles against the corroding action of atmospheric humidity, industrial smog, road salt. The material is offered now for general industrial use on finished products and on installed equipment. It is not intended for use on copper, zinc or their alloys.

BREVITY—Identify by IEN - 8599 if you write the maker

SCAFFOLD . . Load trestle rates 8 ton, has six height positions

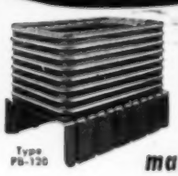
Source: UNIT MFG. CO.
1227-31 Harmon Place, Minneapolis 3, Minn.

Cylinder column in this new Utility Horse is welded into a 10 by 10-in. base to enclose a smaller column equipped with a semi-circular load cradle. Overall height is 12⅞ in. lowered, 21½ in. in raised position. Each elevation is held by a pin that can be located in various holes. The ½-in. steel pin is fitted with a taper point and is secured by a link chain so it cannot be lost when withdrawn to adjust height.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8600 if you write the maker

TRUSCON STEEL BOXES *fill the bill...*

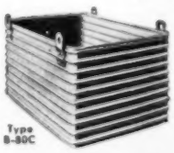


Type PB-120

✓ **for strength**
✓ **for durability**
✓ **for efficiency**

in all your materials-handling jobs!

Truscon Steel Boxes and Steel Skids are the result of many-years of experience in engineering and manufacturing this type of plant equipment.



Type B-80C

We have developed many different types of steel boxes and skids, to meet every type of materials handling problem. This has resulted in features of design and construction that result in unusually efficient performance.

Write for catalog of Truscon Steel Boxes and Skids today.

TRUSCON STEEL CO., Pressed Steel Division
6100 Truscon Avenue • Cleveland 4, Ohio
Subsidiary of Republic Steel Corporation

TRUSCON STEEL BOXES AND SKID PLATFORMS

BREVITY—Identify by IEN - 8601 if you write the maker

rapidly duplicated with

di-acro HYDRA-POWER BENDER

An example of large radius forming.

At last — a PRODUCTION BENDER that "BENDS THEM ALL" —tubing — angle — channel—extrusions—moulding — strip stock — bus bars—and of course, all types of solid materials. U-Bolts and Eye-Bolts are just two examples of the shapes that can be rapidly produced in one operation with this hydraulic power bender.

The DI-ACRO HYDRA-POWER BENDER can be easily set up in your own plant for a great variety of forming operations, or it can be delivered completely tooled for speedy production of a specialized part. Investigate this universal machine before you buy any "single purpose" bender.

Send for

"DIE-LESS DUPLICATING" CATALOG

giving full information on all DI-ACRO Benders, Brakes, Shears, Rod Parters, Notchers, Punches—also our offer of free DI-ACRO Engineering Service.

DI-ACRO is pronounced "DIE-ACK-RO"

O'NEIL-IRWIN MFG. CO.
318 8th Avenue, Lake City, Minnesota

BREVITY—Identify by IEN - 8602 if you write the maker

PEERLESS
OFFERS A COMPLETE LINE OF VERY ECONOMICAL AND EFFICIENT GENERAL PURPOSE PUMPS

PEERLESS PUMPS

ELECTRIC, BELTED AND FLEXIBLE COUPLED DRIVES

HEADS: UP TO 260 FT.
CAPACITY: UP TO 5500 GPM
MOTORS: ¼ TO 150 H.P.

This complete line of pumps can be usefully, efficiently and economically applied to almost every commercial and industrial service. Two types available: Type PE is a close coupled electric drive utilizing standard pump motors. Type PB provides belt or flexible coupled drive on common base. Both provide excellent efficiencies and good hydraulic characteristics. They are compact, dependable, economical and durable. Easily maintained. Write today for descriptive Bulletin B-2300. Use it as a buyers' guide for general purpose horizontal pumps.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

Factories: Los Angeles, California, and Indianapolis, Indiana.
Offices: New York, Atlanta, Fresno, Los Angeles, Chicago, St. Louis, Phoenix; Dallas, Plainview and Lubbock, Texas; Albuquerque, New Mexico.

BREVITY—Identify by IEN - 8603 if you write the maker

small size

Yarway Impulse Steam Trap is hardly larger than a pipe union. Easily installed *anywhere*. ½" trap weighs 1¼ lbs.; 2" trap only 8½ lbs. Over 650,000 Yarway traps have been *proved on the job*. Sold by over 200 distributors. For name of nearest one, or free bulletin, write . . .

YARNALL-WARING CO., 122 Mermaid Ave., Phila. 18, Pa.

YARWAY IMPULSE STEAM TRAP

BREVITY—Identify by **IEN - 8604** *if you write the maker*

MACHINE LOADING, SCHEDULING, DISPATCHING AND JOB ASSIGNMENT

Bulletin outlining procedure widely used for these cost-cutting results now available:

Visual Scheduling . . . a glance at Board shows work ahead for each machine or man.

Order Sequence . . . quickly indicated by arrangement of tickets representing orders.

Schedule Changes . . . easily specified by rearranging tickets in revised sequence.

No Delay Between Planning and Dispatching . . . no lists or records to write.

Operation According to Plan Assured.

Readily Adapted . . . to production, assembly, maintenance, engineering and work of every variety, using work orders, time tickets, move tickets, tabulating cards, etc. and McCaskey Machine Control Boards.

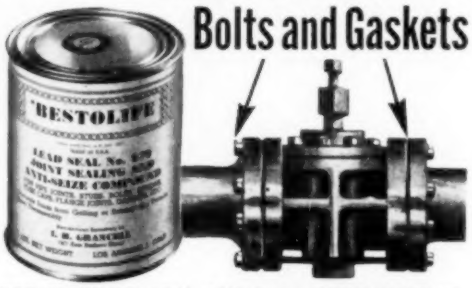
Write today for your copy of illustrated Bulletin A-630 IEN containing all the facts.

The McCaskey Register Company, Alliance, Ohio

McCASKEY INDUSTRIAL CONTROLS
PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

BREVITY—Identify by **IEN - 8605** *if you write the maker*

...Use 'BESTOLIFE on Bolts and Gaskets



FOR A BETTER SEAL AND FULL JOINT MAKE-UP

'Bestolife Lead Seal Pipe Joint Compound used on bolts and any threaded connection gives **full** joint make-up — used on gaskets it gives a guaranteed seal. Use 'Bestolife for air, gas or any fluid — on any joint — at any pressure — at any temperature. Used world-wide for twenty years. Unconditionally guaranteed. See your supply dealer or write direct for literature and prices.

JOBBERS AND DEALERS WANTED

I. H. GRANCELL
1601 E. NADEAU ST., LOS ANGELES 1, CALIFORNIA

BREVITY—Identify by **IEN - 8606** *if you write the maker*

SAVE UP TO 85% ON TOOLS—MACHINERY AND PARTS!!
NEW! 200 PAGE CATALOG

STATIONARY or PORTABLE D.C. ARC WELDER For light or heavy industrial work. Delivers 300 Amps., continuous — or 350 to 400 Amps., intermittent. Designed to weld continuously for hours. . . This unit is built around a rugged, heavy duty, aircraft type generator and comes complete with Pulley reactor, output controls, Hi-Lo switches & rheostat mounted on sturdy steel frame. Operates on 15 H.P. for maximum output. Gas or electric motor. **97.50**

JUST OFF THE PRESSES! IMMEDIATE DELIVERY! ORDER NOW!!
Our latest and biggest CATALOG of NEW and SURPLUS BARGAINS. Thousands of items at UNHEARD OF LOW PRICES! SAVINGS UP TO 85% in Hand & Power Tools, Electrical Supplies, Industrial Machinery, Gas and Electric Motors, Winches, Hoists, Machine Tools, Gauges, Welding Equipment, Pneumatic & Air Tools, Raw Stocks, Aluminum, Brass, Copper, & Steel in Sheets, Bar, Rods, Tube & Extrusions. Nuts, Bolts, Rivets, Screws, Wire, Cable and a Huge Stock of HYDRAULIC SUPPLIES including Cylinders, Valves, Pumps, Motors, Fittings, Tubing, etc. While these items last we will continue to sell them at typical low Palley Prices. Write for your copy of this Bargain Packed Catalog TODAY!

WAR SURPLUS SAVINGS

PALLEY SPECIALS on HYDRAULIC PUMPS & CYLINDERS

HYDRAULIC PUMP or MOTOR GEROTER TYPE Logan Geroter type. For operating hydraulic systems on trucks, tractors, etc. Delivers 8 GPM at 1200 RPM at 1000 PSI with 5 HP. Can also be used as Hydraulic fluid motor. 3/8" stand pipe ports. ½" splined shaft for pulley or direct attachment. 5½" dia., 7" long. Used but condition guaranteed. **19.50**

Special! HYDRAULIC CYLINDER Gives 20,000 lbs. thrust (push or pull) using 1500 PSI line pressure as obtained from our hydraulic pumps. Will produce up to 40,000 lbs. thrust with 3000 PSI. Can also be used on low pressure air systems. 4" bore; 18" stroke; 30½" length. Ideal for road — farm — shop machinery. **29.95**

P-3 STRATO POWER PUMP With built-in variable flow control valve in head. Positive displacement piston type. Displacement capacity: 2 gal. per min. at 1500 RPM at 1250 PSI. Pressure limit 1250 PSI continuous. 1400 PSI for 15 sec. Operates at 3750 RPM, intermittent max. 4500 RPM. Rotates either direction without adjustment . . **19.50**

No. 3 HYDRAULIC CYLINDER Double action. Bore is 1" — Shaft ½". Has stroke of 2½" to 4". Stroke can be adjusted with internal sleeve stops. Overall length is 8½". Will take 1500 lbs. continuous duty. 3000 lbs. intermittent. Will lift or push up to 1100 lbs. **5.75**

P-4 VICKERS ANGLE PUMP Positive displacement type, angle piston. Displaces .507 cu. in. per revolution. Has capacity of 6 gal. per min. at 3000 RPM at 1500 PSI, continuous, 1875 for 15 sec. Operating speed of 3750 RPM, intermittent maximum, 4500 RPM. Rotates to the right only. **19.29**

4 WAY VALVE Poppet type. Pressure balanced. Off at neutral position. Piston type with built-in relief valves for limit of cylinder strokes. 5/8" AN tube size (7/8"-14 thread) inlet & outlet. AN Ports to cylinder are 1/2" AN tube size (3/4"-16 thread). **9.75**

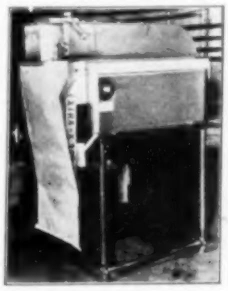
PALLEY SUPPLY CO. DEPT. IN-9, 4321 SAN FERNANDO RD. GLENDALE 1, CALIF.

Order from this ad. All sales final. All prices F.O.B., Glendale. Pay by M.O. or check. P.O.'s accepted from D.&B. firms. ½ deposit with C.O.D.'s.

BREVITY—Identify by **IEN - 8607** *if you write the maker*

PACKAGING . . Scale type machine fills containers by weight, to 200 lb.

Source: THAYER SCALE & ENGINEERING CORP.
399 Webster St., Rockland, Mass.



Bulk materials with relatively free-flowing characteristics such as abrasives, chemicals, feeds, fertilizer, salt, sugar, can be delivered into containers in predetermined weights to 200 lb. by this new new Model 300G Filling Scale. Accuracy is plus or minus 0.1 lb. and speed is at the rate of 10 bags per min. based on 100-lb. weight. The machine can be equipped with an oval-shaped bag-clamping outlet or with a hinged roller-type foot on which to mount a drum. It can be made portable by addition of casters and floor locks for positioning under various supply bins or on a conveyor line leading to a bag-sewing machine.

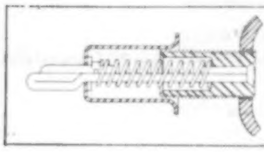
Crystal, flake, granular or pellet material to be handled is introduced at top connection from an overhead supply to flow into the feeder section which is mounted on the scale. Those parts of the feeder which come in contact with the material are made of stainless steel. The feeder gate is self-cleaning in the event that the material tends to cake. The gate shuts off to protect hygroscopic materials and to stop flooding.

Feeder action continues until the predetermined weight has been reached when it stops and, in bag filling, the machine can be set to release the filled bags automatically or to hold them for release by finger pressure on a control switch. Signal lights indicate, by amber, that a bag is being filled, by white, that the bag has been filled to the correct weight and by red, that it has been filled overweight. An overweighted bag cannot be released automatically. The scale is the company's shock-proof design which does not employ knife-edge pivots. It carries a 10-year guarantee.

BREVITY—Identify by **IEN - 8608** *if you write the maker*

CLAMP . . Applies in hole to secure metal sheet for riveting

Source: AIR ASSOCIATES INC.
49 Bendix St., Teterboro, N. J.



Interlock trade names new design of the company's Double Action sheet clamps which can be passed through mating rivet holes in two or more metal sheets to hold the sheets prior to riveting. Access is required to only one face of the work for application or removal. Four sizes apply in holes measuring 3/32 to ¼ in. in diameter. Grip length is ¼ in. for the first three, 7/16 in. for the ¼-in. size.

The formed end of the clamp is entered through a drilled or punched hole until the heel of the formed portion passes the inner face. Then inward movement is continued until the mating plain finger also is in the hole. This finger offsets the formed end so the form is in engaged position and cannot be retracted through the hole. A spring inside the cylindrical sleeve holds the assembly in position but, if additional pressure is required, the clamping wing nut at the threaded rear end can be turned down against the sleeve.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

BREVITY—Identify by **IEN - 8609** *if you write the maker*

How to Handle Shells

Logan Concave Roller Conveyor is recommended for the following reasons:

1. Shape of Logan Rolls eliminates lateral rolling.
2. Straight and curved sections are available.
3. Rolls are Neoprene covered for use after copper band is applied to shells.
4. Rollers are available in sizes to handle 3" shells and up.
5. Suitable power conveyor also available when required.

NOTE: Smaller sizes of shells may be handled on pallets on Conventional Logan Roller Conveyor.

Write today for further information or for the nearest Logan Engineer to call.

Logan Conveyors

LOGAN CO., 200 CABEL ST. • LOUISVILLE 6, KY.

BREVITY—Identify by **IEN - 8610** *if you write the maker*

GET THIS CATALOG NOW . . .

For valuable information on high-speed process measurement and control

Wherever unusual instrument speed is required in measuring, recording or automatically controlling, the vacuum tube actuated Speedomax is ready to do the job. L&N Catalog ND46(1) contains 40 pages of information on Speedomax Type G instruments. Details of ranges, specifications, types of equipment for particular jobs, etc., are catalogued in reference form. For specific help on a specific problem, feel free to call on an L&N engineer, or write to Leeds & Northrup Company, 4905 Stenton Avenue, Philadelphia 44, Pa.

LEEDS & NORTHRUP COMPANY, 4905 STENTON AVE., PHILA. 44, PA.
LEEDS & NORTHRUP
MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES
Jrl Ad ND46(2)

BREVITY—Identify by **IEN - 8611** *if you write the maker*

new CHAIN MAINTENANCE HANDBOOK

Your Guide to Longer Chain Life

Want to get longer life from your chain drives and conveyors? This new handbook is packed with tips that help make chains last longer. There are sections on installation, operation, lubrication, repair and storage, with a special section on sprockets. There are lots of sketches, photos and charts . . . and it's bound in a handy pocket size.

Send for your copy today!

REX DRIVE AND CONVEYOR CHAINS

51-129

CHAIN BELT COMPANY, 1675 W. Bruce St., Milwaukee 4, Wis.
Gentlemen: Please send me Bulletin 51-7.

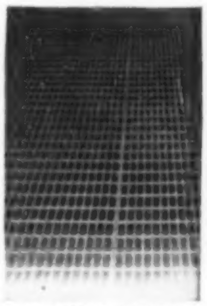
Name..........
Company.......... *Dept*..........
Address..........
City.......... *State*..........

BREVITY—Identify by **IEN - 8612** *if you write the maker*

FIRST EXAMINE . . . THEN SELECT THE GRATING WITH ALL 5 SUPERIOR FEATURES!

1. STRONG electroforged construction for easy installation.
2. MAXIMUM OPEN AREA for light and air.
3. EASY TO MAINTAIN . . . paint reaches entire surface.
4. SELF-CLEANING, no sharp corners to clog.
5. SAFE footing at all times with twisted cross bar.

Write for complete specifications



BLAW-KNOX DIVISION OF BLAW-KNOX COMPANY
2050 Farmers Bank Building
Pittsburgh 22, Pa.

BLAW-KNOX *Electroforged®* STEEL GRATING AND STAIR TREADS

BREVITY—Identify by IEN - 8613 if you write the maker

Molded On Rubber Tired Wheels

THOMAS

MAKES 1000 DIFFERENT KINDS OF CASTERS & WHEELS

Write for complete catalog and price list

THOMAS TRUCK & CASTER CO.

205 Mississippi River
KEOKUK, IOWA

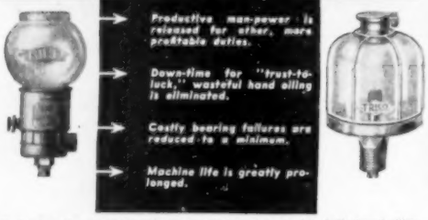
BREVITY—Identify by IEN - 8614 if you write the maker

TRICO *America's Finest*

AUTOMATIC OILERS

Repay Their Cost

MANY TIMES OVER



- Productive man-power is released for other, more profitable duties.
- Down-time for "trust-to-luck," wasteful hand oiling is eliminated.
- Costly bearing failures are reduced to a minimum.
- Machine life is greatly prolonged.

Eliminate old, wasteful and dangerous "trust-to-luck", daily hand oiling methods . . . One filling of TRICO Oilers lasts a long time and provides perfect, constant bearing protection at all times. Switch to TRICO Oilers now . . . They are quickly and easily installed. There's a type and size for every application.

WRITE FOR FREE CATALOG

Speed Up Fuse Replacement with TRICO

FUSE PULLERS

Write For Free Bulletin No. 5

Prevent burns, shocks, serious infection and compensation costs. Also handy for adjusting switch and fuse clips. Every electrician should carry one. . . . Hang one at every fuse box.

TRICO FUSE MFG. CO. Milwaukee, Wis.

BREVITY—Identify by IEN - 8615 if you write the maker

DOWNS SAFETY GRABS

...GRIP ANYTHING!

FOR CRANES AND HOISTS...

Material lifting equipment will do more work—faster, easier—when you have the proper "grabs" for every type of load. No matter what your hoists are handling—pipe, rails, drums, plate or structural steel, stone, timber, boxes or odd-shaped objects of any description—there's a DOWNS *Safety* Grab that will enable you to do it faster, easier *and* safer. Learn new short cuts to greater efficiency for YOUR plant with DOWNS' *complete line* of *Safety* hoist grabs!

Write for Free Illustrated Catalog 200 Today!

DOWNS CRANE & HOIST CO.

MECHANICAL ENGINEERS

540 W. VERNON AVENUE • LOS ANGELES 37, CALIF.

BREVITY—Identify by IEN - 8616 if you write the maker

PRESS . . Double acting hydraulic rates 1,500 ton, has 80 in. stroke

Source: CLEARING MACHINE CORP.
6491 W. 65th St., Chicago 38, Ill.

Blank holder slide in this new hydraulic press rates 500 ton, is operated by four corner-positioned rams. It surrounds the main punch slide rating 1000 ton. This slide is powered by a single ram centrally located. It is equipped with auxiliary ways in the head of the press to keep the slide square with the press bed when die loading is made off center to one side or the other.

The main slide and blank-holder can be adjusted in relation to each other to suit punches of any length by means of movable lugs at each corner and an arrangement of keyways permitting adjustment in 2-in. increments. These same keyways are used with brackets to tie the blank holder and inner slide for single-acting operation.

In addition to the two slides the press is equipped with three hydropneumatic cushions, each independently adjustable, for pressure to a maximum of 150 ton per cushion. Cushion stroke is 30 inches. The press will draw and lift out a 30-in. work piece.

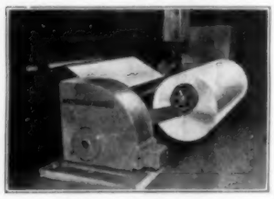
The bed measures 96 by 162 in. and is equipped with an auxiliary filler plate so minimum shut height can be reduced to 20 in. for first draw or shallow die work. Removal of this plate increases the minimum shut height to 50 inches. Drive is by two 200-hp. motors and hydraulic equipment mounted on the press.

Control centers at one corner of the press with operating adjustments at floor level. Reversal can be obtained by position or by pressure. There are three pressing speeds in addition to quick advance and return. Desired combinations are selected by operating switches on the control panel.

BREVITY—Identify by IEN - 8617 if you write the maker

WINDING . . Shaftless backstand unwinds sheet from roll for processing

Source: BAGLEY & SEWALL
500 Fifth Ave., 21st Floor, New York 18, N. Y.

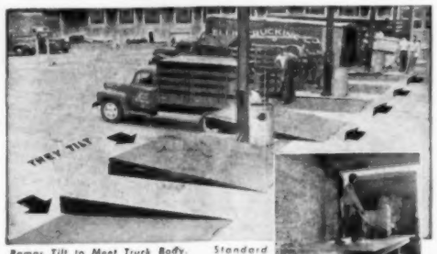


A roll of paper or other sheet material rides on two tapered plugs carried by load-supporting arms in this new No. 55 shaftless backstand. The arms are lowered to register the plugs with the center of a new roll and then are raised by reversing motor drive to lift the roll into unwinding position so the sheet can be threaded into the equipment that is to process it. A second motor moves the arms laterally to position the plugs for rolls of varying length. An adjustable wheel-type tension device applies on the roll end to maintain desired tension in the sheet as it is unwound.

The stand will take rolls to 42 in. in diameter and to 100 in. in maximum width. The design permits roll changing in a little under ½ minute. Overall height is 52 inches. Distance not counting an idler roll housing, is 32 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8618 if you write the maker



Ramps Tilt to Meet Truck Body.

Standard Wayne Platform Lift

Cut Costs

WITH WAYNE LOADING DOCK LIFTS

YOU CAN save time and money with Wayne Hydraulic Leveling Ramps to adjust the level of the loading dock to the truck height. Material on skids can be directly transported into the truck body over a level path. A variance of as much as 20 inches in the height of truck bodies may be instantly adjusted by merely turning a valve. Users say: "Cuts Loading time in half." . . . "As good as doubling dock facilities." Send for illustrated folder now.

THE WAYNE PUMP COMPANY
531 Tecumseh Street, Fort Wayne 4, Indiana

NATIONWIDE SERVICE for your protection

BREVITY—Identify by IEN - 8619 if you write the maker

Precision plastics in small lots are now available at the lowest possible die mold cost. This new method is primarily for pilot runs in the production of 100 to 5000 small precision plastic moldings for experimental and other purposes where conventional type die molds would be prohibitive.

Present capacity: 2-ounce size, 2 x 4 x 6"

Your inquiries are invited.

DAYTON ROGERS
Manufacturing Company
MINNEAPOLIS 7, MINNESOTA

BREVITY—Identify by IEN - 8620 if you write the maker

Get 19" Lift from 2½" Clearance!

SIMPLEX
RATCHET LOWERING
JACKS

Lift or Lower Notch-by-Notch—Cannot be Tripped

With Simplex Ratchet Lowering Jacks a minimum of toe clearance is required—and only Simplex Jacks provide equal lift capacity on *toe or cap*. In fast jacking action, all-purpose utility, extra safety features and rugged strength for longer life, Simplex Ratchet Lowering Jacks give you more for your money! Capacities of 1½ to 35 tons. Write today for Bulletin: Industrial 49.

SAFETY SUGGESTION—Use thin wood block—don't lift or lower steel against steel.

Simplex LEVER • SCREW • HYDRAULIC **Jacks**

TEMPLETON, KENLY & CO.
1012 S. CENTRAL AVE. • CHICAGO 44, ILLINOIS

BREVITY—Identify by IEN - 8621 if you write the maker

Straps and Supports

to attach fast...hold fast

Almost every manufactured product or manufacturing process requires that various components be fastened together. Traditional screws and bolts are sometimes undesirably heavy and time consuming in assembly and disassembly. These disadvantages can be overcome with Marman Straps and Supports which use a steel band to surround or support the object to be fastened and a quick easy take up screw to tighten and hold them in place. Lugs and Clips can be easily attached to the Strap or Support allowing it to perform several fastening jobs at once. In this fashion a Strap might be used to fasten a small motor in place and also to support wiring, ducting or fuel lines.

Marman Straps and Supports provide light weight, fast assembly and disassembly, and hold fast under stress and vibration. Chances are you will find they can save you time and money with products under design or in production. We'd like to work with you.

Our catalog explains further . . . just write dept. I-9

MARMAN PRODUCTS CO. INC.
940 WEST FLORENCE AVENUE
INGLEWOOD, CALIFORNIA

BREVITY—Identify by IEN - 8622 If you write the maker

SAVINGS AS HIGH AS 50%
MADE WITH THIS P-K SCREW
It's the "one operation" fastener

SIMPLE
Hammered or Pressed into Plain Holes
SPEEDY
No Tapping No Mold-Complicating Inserts
STRONG
Tamper-Proof Permanent Fastening

P-K TYPE "U"
Hardened METALLIC DRIVE SCREW
For permanent fastenings in castings, heavy sheet metal, plastics. One of many types. For details, write Parker-Kalon, 200 Varick St., New York 14, N. Y.

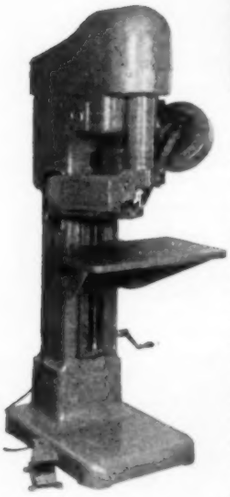
Call in a P-K Assembly Engineer
See why industry's fastening-wise leaders say —
IF IT'S P-K® . . . IT'S O.K. — THE *ORIGINAL*
PARKER-KALON® SELF-TAPPING SCREWS
AVAILABLE EVERYWHERE THROUGH ACCREDITED DISTRIBUTORS

BREVITY—Identify by IEN - 8623 If you write the maker

Cigrin D.P.S. Comes Through

WITH A SOLUTION TO ANOTHER PRESENT-DAY PRODUCTION PROBLEM—NUT DRIVING

No Need to Limp Along With Slow Hand-Operated Tools—
USE THIS REMARKABLE NEW
NUT DRIVER



Backed by a quarter century's experience in meeting production assembly problems, the Detroit Power Screwdriver Company replaces another outmoded method in bringing out this outstanding hopper-fed nut-driving machine . . . Amazing speed is attained, either automatically or semi-automatically, in driving nuts from 5/16" minimum to 1 1/16" maximum across flats . . . The manual handling of nuts is entirely eliminated except to load the hopper which feeds the nuts to the driving spindle. The machine is equally efficient for special nuts such as Jam, Castellated, Lock, etc.

Send for further details, also information about D.P.S. Power Screwdrivers, Motorized Hopper Units and Special Assembling Machines.

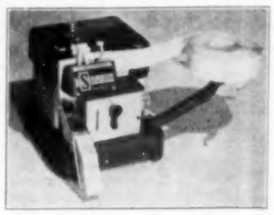
1926 Our 25th ANNIVERSARY 1951

DETROIT POWER SCREWDRIVER CO.
2815 W. FORT ST. DETROIT 16, MICH.

BREVITY—Identify by IEN - 8625 If you write the maker

PRINTING . . Motor driven machine prints on labels that feed from roll

Source: SOABAR CO.
5811 Erdrick St., Philadelphia 24, Pa.



Labels, tickets, string tags, assembled in rolls, are threaded between the back of this recently improved machine and the type-holding head at the front after the type chase has been set up from any or all of three metal-type fonts supplied with the machine. A counter can be set for a desired total and an electric circuit closed to start the operation. The machine then prints at speeds to 150 impressions per minute. The printed pieces are cut from the strip and delivered into a chute at the front of the machine. A roller inks the type as the machine operates. The counter stops further action when the desired total has been reached.

Drive is by a 1/20-hp. motor for operation on 110-volt ac. or dc. Weight is 55 pounds. Overall dimensions are 12 by 12 by 14 inches. Designation is Model-35 Self-Stop Marker. List price is $325 to $530 depending on the special attachments that may be specified.

Capacity is for string tags from 5/8 to 2 1/4 in. in length, pin tickets from 1 to 6 in. in length, gummed and self-adhesive labels from 5/8 to 1 3/8 inches. It also will take ring-seal tickets, wedge tickets, sew-in tickets, button tickets, hole tickets in a range of sizes with verical and horizontal perforations.

BREVITY—Identify by IEN - 8626 If you write the maker

CLEANING . . Engine driven sweeper rides under the forks on a lift truck

Source: LITTLE GIANT PRODUCTS INC.
1528-32 N. Adams St., Peoria, Ill.

Cylindrical brush, 48 in. in width, is driven by a gasoline engine mounted on the housing of this new Yard Bird sweeper. The brush rotates at 164 rpm. to drive dirt and refuse into a hinged collector box at the front of the machine. A 30-gal. water tank connects to a spray head manifold to wet down dust in the machine's path. Between 80,000 and 100,000 sq. ft. of floor surface can be cleaned per hour at a moving speed of 5 miles per hour. Overall dimensions are 60 by 50 by 44 inches.

List price is $975. Application is on any standard fork-lift truck rating 2,000 lb. or more. The unit suspends by means of clamps and wing nuts from the truck forks in an arrangement to permit application or removal within about 3 minutes. Accumulated dirt is dumped by operating a lever at the side of the housing. The machine can be set on the forks at a 15-deg. angle and the box removed, to sweep snow to one side.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8627 If you write the maker

"HAVE NEVER WORKED LOOSE On Over 3000 Pumps!"
—says this manufacturer about

ZIP-GRIP* Self-Locking SET SCREWS

Williams Machine & Tool Co., Omaha, Neb., writes... "The ZIP-GRIP* Self-Locking Set Screw eliminates use of nut, and spot facing. Not one has worked loose on 3000 pumps built and in use now about one year."

Send for FREE Demonstrator that Shows You Why... over 125 Manufacturers adopted ZIP-GRIP* Self-Locking Set Screws in one year's time.

With your ZIP-GRIP* Action Demonstrator we'll also send you illustrated Data Sheet and offer of Engineering Test Samples to suit set screw application conditions that have been puzzling you.

*Pat. Pending
Makers of SETKO SET SCREWS

Set Screw & Mfg. Co.
5 Main St. Bartlett, Ill. (Chicago suburb)

We specialize in Solving Puzzling Set Screw Problems.

BREVITY—Identify by IEN - 8628 If you write the maker

Calling all users of Speed Reducers!

Get the new Cleveland Book FREE

Bulletin 130 gives rating tables, dimensions and other data you need in selecting the right sizes in standard worm-gear speed reducers. Ask for your copy.

New bulletins on other types of Cleveland worm gear drives and worm-gear sets also available. Outline your needs. The Cleveland Worm & Gear Co., 3258 E. 80th St., Cleveland 4, Ohio.

CLEVELAND Worm Gear *Speed Reducers*

BREVITY—Identify by IEN - 8629 If you write the maker

How to save Labor and Money by Centralizing Lubrication

FOR more than 20 years, Farval has been saving manpower and money for users. Through efficient, dependable lubrication of machines and industrial equipment of all kinds, Farval saves 4 ways: It saves oiling labor, it saves lubricant, it reduces bearing expense, it eliminates down time.

The Farval System is a positive mechanical method of delivering oil or grease under pressure to a group of bearings from one Central Station, in exact quantities, as often as desired. It consists of a central pumping unit, two main supply lines and a measuring valve for each bearing.

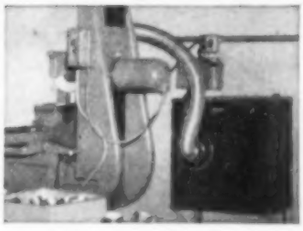
Bulletin 25 gives you the facts and figures to apply to your own lubrication problems. The Farval Corporation, 3258 East 80th St., Cleveland 4, Ohio.

Write for *FREE* Bulletin 25

FARVAL
CENTRALIZED SYSTEMS OF LUBRICATION

BREVITY—Identify by IEN - 8630 If you write the maker

STOP DUSTS



Instantly *with* DUSTKOP

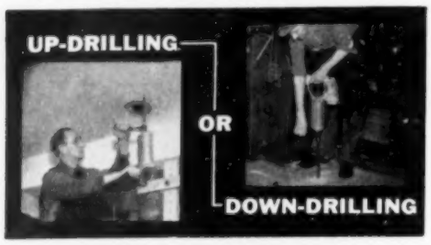
Available from stock of 22 standard models
300 cfm to 10,000 cfm

for: Surface Grinders, Tool and Cutter Grinders; Polishers and Buffers; Abrasive Belts and Discs; Woodworking and Plastic Industry Equipment . . . DUSTKOPS collect almost all kinds of industrial dusts.

Ask for Catalog 605-2. Describe dust problem for recommendation by return mail — no obligation.

AGET-DETROIT CO.
401 Main Street Ann Arbor, Michigan

BREVITY—Identify by IEN - 8631 if you write the maker



It Makes No Difference to

SYNTRON

DEPENDABLE

ELECTRIC HAMMERS

They'll Save You Money and Time on any Job that Requires Drilling, Cutting and Chipping in Concrete and Masonry.

—and on scores of other jobs, too—scaling, tuck pointing, bush hammering, redressing mill stones, etc.

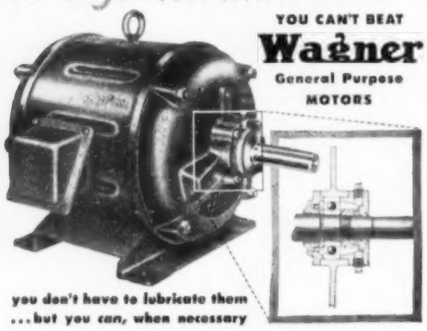
Write for illustrated folder.

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 8632 if you write the maker

for longer useful motor life—

YOU CAN'T BEAT **Wagner** General Purpose MOTORS



you don't have to lubricate them ...but you *can*, when necessary

Wagner bearing housings are effectively sealed against the entrance of dirt or grit that cause rapid wear. You don't have to lubricate the bearings (motors in the smaller frame sizes will often operate for the life of the unit without lubrication) but, Wagner Motors are provided with two lubrication openings—you *can* lubricate them, to add much useful motor life where the motors are used in tough applications.

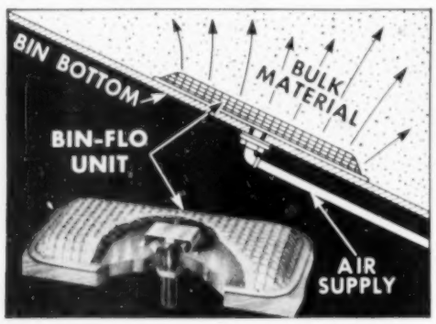
Wagner's new Bulletin MU-131 gives full information on the proper lubrication of electric motors—write for your copy.

Wagner Electric Corporation 1891 1951

6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

BREVITY—Identify by IEN - 8633 if you write the maker



BIN-FLO

USES SMALL VOLUME OF AIR AT LOW PRESSURE

KEEPS BULK MATERIALS MOVING

BIN-FLO units in bins, chutes, hoppers, etc., restore flow characteristics to dry, finely ground materials which tend to pack or bridge in storage. Types for all materials and conditions. No moving parts; simple installation; negligible operating cost; no maintenance cost.

BIN-DICATOR bin level indicator—"The Eyes of the Bin"—automatically reports levels of materials in storage, automatically controls filling machines; prevents waste.

NEW 20-PAGE BOOK FREE

THE BIN-DICATOR CO.
13946-B Kercheval • Detroit 15, Mich.

BREVITY—Identify by IEN - 8634 if you write the maker

WOOD WORKING . . Rim circle saw, 20 or 30 in. blade and engine drive

Source: BARKER SAW CO.
Box 925-A, Commercial Sta., Dept. I, Springfield, Mo.

The blade in this new saw rides inside three ball-bearing steel rollers in an aluminum frame. It is driven by a friction wheel with flexible shaft connection to a gasoline engine. The blade can be operated in any position and the 30-in. unit will cut timber to 30 in. in diameter. Weight of this unit with a 3.6-hp. engine is 85 pounds.

The saw can be handled by one operator. It cuts in a direction away from the operator and is held in place on the work by a hinged hook finger opposing the saw action. The blade can be filed and set on the job in its frame.

BREVITY—Identify by IEN - 8635 if you write the maker

ROCK DRILLING . . Carbide tipped bits for plugs and feather holes in granite

Source: NEW ENGLAND CARBIDE TOOL CO.
58-62 Brookline St., Cambridge 39, Mass.

Sizes range from 3/16 to 1¼ in. in hole diameter for the company's new Thunderbolt line of carbide-tipped granite plug drill bits. The bits apply with an adapter chuck in an electric and pneumatic hammer-type drill. On a test application of a ¾-in. unit, average speed was 13 sec. per hole to a depth of 3½ in. in wet operation. One bit is good for 75 to 100 holes under normal conditions before resharpening is required. List price for the ¾-in. size is $11 with other sizes in proportion.

BREVITY—Identify by IEN - 8636 if you write the maker

CUTTING . . Book of useful information on how to make and use carbide cutting tools

Vascoloy-Ramet Corp.
850 Market St., Waukegan, Ill.

New edition of American Technical Society's book, "Carbide Cutting Tools," is sponsored and offered by the company to assist in employee training. List price of $5.50 for the 416-page book includes a 62-page Study Guide for trainees and students.

Subjects include development of carbides, converting to carbide tools, tool design, tipping a carbide tool, speeds and feeds, coolants, forming tools, milling cutters, multiple-edge tools, carbide selection, grinding and use of tools. There are 283 illustrations in addition to charts and tables. Each of the 17 chapters contains a set of questions and references.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8637 if you write the maker

BROWNING

First Again!

BROWNING SHEAVES

with "UNBREAKABLE" MALLEABLE IRON

SPLIT TAPER BUSHINGS

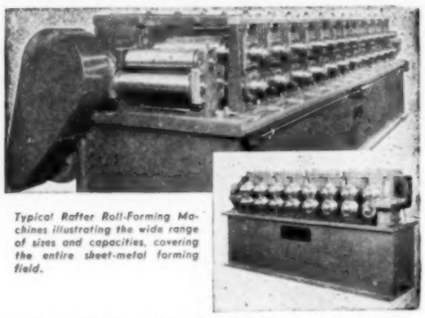
WRITE FOR THE NAME OF THE BROWNING DISTRIBUTOR NEAR YOU

BROWNING MANUFACTURING COMPANY
MAYSVILLE, KENTUCKY, U. S. A.

BREVITY—Identify by IEN - 8638 if you write the maker

RAFTER COLD METAL ROLL-FORMING MACHINES

Correct Design for Maximum Efficiency



Typical Rafter Roll-Forming Machines illustrating the wide range of sizes and capacities, covering the entire sheet-metal forming field.

Patented balanced gear drive mounted on roller bearings distributes power efficiently to each pair of rolls . . . Gear ratio is a continuous reduction from drive shaft to roll shaft, quiet, efficient and compact. This drive consumes less power than any other type . . . Exclusive design permits greatest vertical adjustment of the upper roll spindles, without the aid of square gearing or small complicated gears . . . Design permits quickest and most accurate change of rolls possible. Shafts always remain parallel. Adjusting screws connect front and rear bearings . . . Low power consumption, lasting accuracy, longer roll life, and higher output are made possible by these and many other features.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street • Belleville 9, N. J.
GANG SLITTERS and PRESS BRAKE DIES

BREVITY—Identify by IEN - 8639 if you write the maker

SPREADS THE STRAIN!

The RAMSEY "Diagonal" Flexible Coupling

Note how the steel pinions are cut diagonally to stagger the shear point of the chain pins and utilize the full width of the chain. This patented RAMSEY design gives greater strength to the assembly, assures longer life under greater loads! Easily installed, aligned, and disconnected. Available in ten sizes, from ½" bore, in capacities to 600 hp. Write today for literature giving dimensions, capacities, list prices.

SILENT CHAIN DRIVES—FLEXIBLE COUPLINGS

RAMSEY CHAIN COMPANY, INC.
5152 BROADWAY • ALBANY, N. Y.

BREVITY—Identify by IEN - 8640 if you write the maker

STOP LABOR WASTE WITH *Ledeen* CYLINDERS

Wherever you have to
PUSH or PULL
LIFT or LOWER
PRESS or SQUEEZE
TILT or TURN
OPEN or CLOSE

Ledeen cylinders provide positive, dependable power and pressure in straight line motion. Designed for air, oil, or water operation, they are uniform in design and construction, affording a wide number of varieties and adaptations. Ledeen cylinders are easy to install, occupy minimum space, and are built for long, economical service.

Standard Ledeen cylinders and mountings are available from distributors' stocks in major cities. Special cylinders if required. J.I.C., of course.

Ledeen CYLINDERS ARE GOOD CYLINDERS

Write for Bulletin 500

Ledeen Mfg. Co.
1602 San Pedro St.
Los Angeles 15, Cal.

BREVITY—Identify by IEN - 8641 if you write the maker

Link-Belt CAR SPOTTER releases manpower for other jobs

Get faster car spotting

Reduce switching and demurrage time to a minimum. One man with two or three turns of rope around the motor-driven capstan will handle up to six loaded railroad cars. Available with 5 or 10 hp, integral or separate motors, stationary or portable.

Link-Belt offers a complete line of car spotters . . . also specializes in drum type puller applications.

WRITE TODAY

For 16 Page Bulletin 1992-A

LINK-BELT COMPANY:
Chicago 8, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices, Factory Branch Stores and Distributors in Principal cities.

BREVITY—Identify by IEN - 8642 if you write the maker

THE EASY AND ECONOMICAL SOLUTION TO HEATING GASES AND PROCESS AIR

CHROMALOX *Electric* **HEATERS**

WANT MORE KNOW-HOW?

Get Catalog 50. It's filled with useful heating data.

For Accurate Temperatures Up to 1000° F Maintained by Thermostat with Manual or Automatic Control

Here is reliable, immediate and continuous heat for drying, curing and baking ovens that give you the temperatures you need. Easily installed in round or rectangular ducts for heating air and gases under forced circulation. Parallel fin design dissipates maximum heat with minimum turbulence of air stream. Moisture proof types available.

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Chromalox Heating Units Advertisement, Page 5

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 8643 if you write the maker

REDUCES ACCIDENT HAZARD IN PRINTING PLANT!

More Proof that PABCO MASTIPAVE is the floor covering for YOU!

Listen to Harold Baxter, Vice-President of A. Carlisle & Co., one of San Francisco's largest printing concerns:

"Mastipave is so satisfactory we are planning to install it in other work areas. Our employees stand most of the time—really appreciate this floor covering. It's comfortable underfoot—has actually reduced the accident hazard from slips and falls. Employee efficiency is so important we couldn't do without Mastipave today. Under rough treatment, including light trucking, Mastipave has stood up well—low in cost—easy to maintain."

PABCO MASTIPAVE *in roll goods and tiles*

GRIP-TREAD *in roll goods only*

- Proved, for over 28 years—in schools, industries, hospitals, public buildings.
- Costs little, looks good, wears long.
- Worth investigating, for YOUR toughest job!

SEND NOW FOR THE FULL STORY OF MASTIPAVE

PABCO PRODUCTS INC.
New York 16 • Chicago 54 • San Francisco 19
(Mail to Dept. E, nearest office)

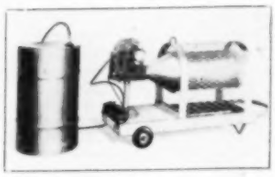
GENTLEMEN: Without cost or obligation to me, please send folder, "Every Building Needs Pabco Mastipave."

NAME_____
ADDRESS_____
CITY_____ STATE_____

BREVITY—Identify by IEN - 8644 if you write the maker

HEATING . . Portable space unit, oil fired, for utility application

Source: ARTHUR C. BAUMAN
7013-19 Grays Ave., Dept. P, Philadelphia 42, Pa.



An oil burner using Grade-2 fuel oil is driven by a 110-volt 60-cycle single-phase motor to fire into the cylindrical steel housing of this new heater. Burner and housing are mounted on a truck with wheels at the burner end and a carrying handle at the opposite end.

The housing is enclosed in a metal screen guard. Its outer end is baffled to permit escape of products of combustion but to prevent any flame from issuing. A length of hose connects to a fuel oil drum. Fuel consumption is 1.35 gph. for a heat output rating of 180,000 btu. per hour.

In operation the cylindrical housing radiates heat to raise temperature in a given area, to drive moisture from the area, to dry materials in storage. Overall dimensions are 48 by 18 by 31 inches. Weight is 175 pounds. Eco-Temp is the name.

BREVITY—Identify by IEN - 8645 if you write the maker

CLEANING . . Germicidal liquid to use on floors, walls, equipment

Source: HUNTINGTON LABORATORIES INC.
Hunt St., Huntington, Ind.

Free sample upon request

Korex Germicidal Cleanser is a new combination of neutral soap, synthetic detergent, water softener and emulsifier. It has a phenol coefficient of 2 and is supplied in concentrated form to mix in one part with 40 parts of water. Application cleans a surface and at the same time destroys bacteria.

It is safe to use on any surface that is not harmed by contact with water. The germicide employed in the cleaner will not irritate human skin. Packaging is in gallon cans at $2.60 per gal. to 55 gal. drums at $2.00 per gallon.

BREVITY—Identify by IEN - 8646 if you write the maker

SAWING . . Portable electric tool applies interchangeably for drilling

Source: P. & L. PRODUCTS CO.
751 Parker Ave., Dept. A, Greenville, Ohio

Control knob on the housing side of this new Trades Master combination tool sets the spindle for reciprocating or rotating operation to handle a saw blade, file, sanding pad or to operate a twist drill. In the latter case capacity is ¼ in. in steel. The tool operates on 110-volt ac. or dc. with its universal ball-bearing motor. The lubricant is sealed in for the life of the tool. Control centers at a switch in the handle. Equipment includes an extension cord and plug.

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BREVITY—Identify by IEN - 8647 if you write the maker

TWO HOSES...ONE LINE!

TWIN-WELD HOSE SPEEDS WELDING STOPS TANGLING

Patented Twin-Weld® combines a green oxygen line and a red acetylene line molded into one compact unit. No more dangerous, tangled separate hoses . . . the operator has one neat, flexible, non-kinking line that makes his job safer, faster, more efficient. Especially useful in close-quarter work. Call your Hewitt Rubber distributor, or write Hewitt Rubber Division, 240 Kensington Avenue, Buffalo 5, N. Y.

HEWITT-ROBINS HR **INCORPORATED**

BREVITY—Identify by IEN - 8648 if you write the maker

BIG NEW SAVINGS with MACHINE BUNDLING

You make a big saving in material costs the moment you adopt machine bundling—for one paper roll replaces hundreds of costly cartons. Our Model F-6 bundles the packages in dozen and half-dozen lots at speeds up to 24 bundles a minute. Just one operator is needed. Sturdy, durable kraft paper is used. Packages may be arranged in a variety of ways and the machine is easily adjusted for different sizes.

The F-6 is one of several efficient bundling machines we manufacture. Write for literature.

PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS
NEW YORK · CHICAGO · BOSTON · CLEVELAND · ATLANTA · DALLAS
DENVER · LOS ANGELES · SAN FRANCISCO · SEATTLE · TORONTO · MEXICO, D.F.

BREVITY—Identify by IEN - 8649 if you write the maker

He's Building a NEW MOTOR CONTROL STATION

to save space, time and trouble

Centralizing the controls for all the motors in an area . . . saves operator's time, saves space, eliminates wall mountings with attendant framework.

Ward Leonard MULTITROL is a complete assembly of individual standardized "blocks", each a complete control for one motor or group. It fits any available space, is completely flexible to allow for future requirements.

Investigate MULTITROL. Write for Bulletin 4410. WARD LEONARD ELECTRIC CO., 33 South St., Mt. Vernon, N.Y. Offices in principal cities of U. S. and Canada.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RESISTORS · RHEOSTATS · RELAYS · CONTROL DEVICES

BREVITY—Identify by IEN - 8650 if you write the maker

CHAMPION

...the Lamp with a reputation for

QUALITY

INCANDESCENT AND FLUORESCENT LAMPS

CHAMPION LAMP WORKS
Lynn, Massachusetts
A DIVISION OF CONSOLIDATED ELECTRIC LAMP CO.

BREVITY—Identify by IEN - 8651 if you write the maker

For Hinges, Stampings and Deep Drawings by the 100 or 100,000 call on Stanley!

Complete Stanley facilities for stampings and special hinges are at your service whether you order in lots of a hundred—or a hundred thousand. Get the economy, efficiency, of turning all your requirements from first sketches to finished product over to one reliable source—Stanley! Write now to:

PRESSED METAL DIVISION,
The Stanley Works,
New Britain, Connecticut.

6 Reasons Why Stanley Is Geared To Give You Better Service:—

1. Comprehensive Engineering Service
2. Stanley-Owned Steel Mills
3. Testing and Research Laboratories
4. Complete Tool-Making Facilities
5. Quantity or Limited Production
6. Plating, Anti-Rust and Colored Finishes

STANLEY

New York • Detroit • Los Angeles
Chicago • San Francisco • Seattle

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

BREVITY—Identify by IEN - 8652 if you write the maker

Save Time, Trouble and Money
Seal Pipe Joints and Gaskets with Leakproof KEY Graphite Paste

Key Graphite Paste will hold a pipe joint leakproof against all petroleum based liquids. Key lubricates as it seals and positively will not freeze the joint.

Key Paste is listed by the Underwriters' Laboratories.

Your jobber will supply you or send for liberal sample and try Key at our expense.

KEY Company
2651 South 27th St., East St. Louis, Ill.

FREE SAMPLE

KEY COMPANY, 2651 South 27th Street, East St. Louis, Ill.

Gentlemen: Please forward free sample of Key Graphite Paste.

Company Name.....
Address.....
Individual.....
Position.....

BREVITY—Identify by IEN - 8653 if you write the maker

FELT! BY THE YARD
FELT! BY THE ROLL
FELT!
IN CUT PARTS

WE MAKE IT . . . WE CUT IT . . . WE SELL IT . . .

All grades • All colors • All textures
All thicknesses • All consistencies

WRITE TODAY FOR FULL DETAILS

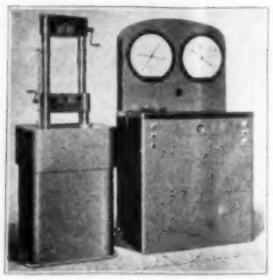
THE FELTERS COMPANY
210-I SOUTH STREET, BOSTON 11, MASSACHUSETTS
Offices: New York, Philadelphia, Chicago, Detroit, St. Louis.
Sales Representatives: San Francisco, Dallas

MAKES THE FELT FOR THE PARTS IT CUTS

BREVITY—Identify by IEN - 8654 if you write the maker

TESTING . . Hydraulic machine for tension, compression, rates 6 ton

Source: BALDWIN-LIMA-HAMILTON CORP.
Paschall Post Office, Philadelphia 42, Pa.



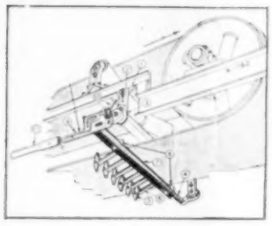
Model 12-H is a new small design of the company's Model 60-H 30-ton machine, previously described IEN-894-50. It provides a 12,000-lb. range graduated in 20-lb. units on a 16-in. indicator dial and a 3,000-lb. range in 5-lb. units. Additional ranges can be specified between 600 and 6,000 lb. in desired dual combinations. The Bourdon gages for the two ranges are precision Emery type, accurate within 1 percent or one dial division, whichever is greater. They are connected direct with the loading cylinder. A standard Baldwin recorder can be employed. Overall dimensions of the two units making up the complete assembly as shown are 5½ by 2 by about 6 feet.

Lateral space between the columns measures 9½ inches. Loading speed is variable in stepless progression to a maximum of 10 in. per minute. Load in tension or compression is applied upward through an 8-in. stroke. An adjusting drive in the base operates at 10 ipm. for an overall adjustment range of 20 inches. Vertical distance between the grip heads can be set between 1 and 21 in., the latter including the stroke. The table is arranged for standard transverse tools.

BREVITY—Identify by IEN - 8655 if you write the maker

CONVEYING . . Scraper attachment removes sticky materials from belt

Source: STEPHENS-ADAMSON MFG. CO.
231 Ridgeway, Aurora, Ill.



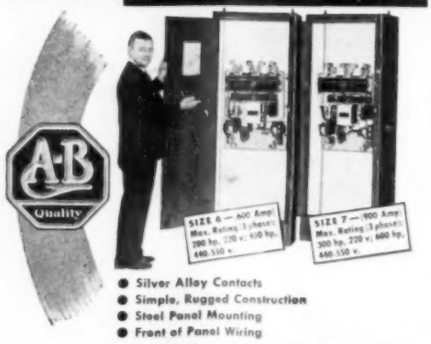
New provision for adjustment and for flexible application to a belt conveyor under varying conditions have been made for the company's spring-type cleaning attachment, previously described IEN-130-33. The wiper-blade and pressure-spring assembly, which includes a cross support, a pressure-adjusting lever and two V-shaped clips, now support the assembly and permit easy removal for replacement of the blade as well as for application on any conveyor frame.

Assembly is made just back of the discharge point on the return run of the conveyor belt to apply the row of thin spring-steel scraper plates at right angles with the surface of the belt and at a slant with its run. Each plate is pressed against the belt by individual spring action that can be set as required. The action is to plow off material adhered to the belt so a clean surface will be restored. Assemblies are available for belts from 12 to 60 in. in width.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8656 if you write the maker

NEW SIZE 6 and SIZE 7 SOLENOID STARTERS



- Silver Alloy Contacts
- Simple, Rugged Construction
- Steel Panel Mounting
- Front of Panel Wiring

Now—all the advantages of SOLENOID design in the NEW Allen-Bradley BULLETIN 709 SIZE 6 and SIZE 7 STARTERS. Allen-Bradley Bulletin 709 Size 6 and Size 7 solenoid starters possess all the features that have proved so successful in smaller Allen-Bradley starters. Write, today, for information. Allen-Bradley Co., 1312 South Second Street, Milwaukee 4, Wisconsin.

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

BREVITY—Identify by IEN - 8657 if you write the maker

We've Built a BETTER HANDLE!

FOR MANUFACTURERS OF PORTABLE EQUIPMENT, CARRYING CASES, PARTS BOXES, Etc.!

- non-rattling
- rugged construction
- rust-proof
- meets Air Force and other Government specifications

Here is the handle you have been looking for—one that is ideally suited for anything that must be lifted by a side carrying handle. Because we could not buy anywhere a satisfactory handle for the thousands of cases manufactured by Bendix and needing such an item, Bendix-Friez engineers developed this handle to meet Air Force and other Government specifications for many kinds of special equipment. The unique, rugged design of this handle, with its "snap-back" feature, is such that neither shock nor vibration will cause it to rattle. Built of aluminum and stainless steel, it can be riveted or welded to the side surfaces of any kind of container or depressed in the sides. Available in large or small lots, orders filled promptly. Write for prices.

Bendix-Friez

FRIEZ INSTRUMENT DIVISION of Bendix
1328 Taylor Avenue
Baltimore 4, Maryland

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N.Y.

BREVITY—Identify by IEN - 8658 if you write the maker

MORE SOLD THAN ANY OTHERS
Write for Catalog
OF USES AND SPECIFICATIONS

GENERAL
Industrial Pneumatic Tires

..SAVE TIME·LABOR·MONEY
Protect equipment and floors • Reduce Breakage

- ★ Wide Base Wheel
- ★ More Air Volume
- ★ More Stability
- ★ More Load Capacity
- ★ Longer Miles in Hi-Speed Service

Available separately or in assemblies of Tires, Tubes and Wheels. Size O. D. 8" to 27"—200 to 4000 lbs. cap. for low and high speeds.

Rigid CASTER FORKS Swivel

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

Send for Catalog • Dept. 3

THE GENERAL TIRE & RUBBER CO. AKRON, OHIO

BREVITY—Identify by IEN - 8660 if you write the maker

2 free books

with the complete money-saving story on Wolmanized Lumber

How to avoid costly damage caused by rot and termites

Use Wolmanized* pressure-treated Lumber wherever timbers are exposed to conditions causing decay or termites. Preservatives that kill rot and termites are driven deeply into Wolmanized Lumber under high pressure (150 p.s.i.). This lasting protection—at low cost—helps Wolmanized Lumber last 3 to 5 times as long as untreated lumber!

Tells facts about millions of feet of Wolmanized Lumber in service in industries for years.

Tells how Wolmanized Lumber is treated and where it can save you money.

Write for your free copies today!

American Lumber & Treating Co.
332 South Michigan Avenue
Chicago 4, Illinois

Wolmanized
PRESSURE TREATED
Lumber
Stops Rot and Termites

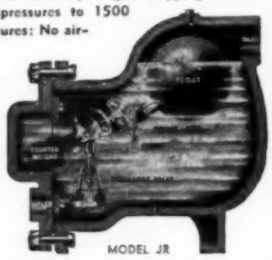
BREVITY—Identify by IEN - 8661 if you write the maker

New NICHOLSON NON-PLUG AIR TRAPS

Introduce Oil-Eliminating Feature Preventing Build-up of Scum and Sludge

In these Nicholson air traps you enjoy the advantages of the positive intermittent action of a float-operated air trap without the common problem of oil congealing on the mechanism and impeding or stopping its action. Three types: pressures to 1500 lbs. Other features: No air-wasting vent. Positive water-seal at valve. Large orifice keeps valve clean. For details send for . . .

Bulletin 651



MODEL JR

W. H. NICHOLSON & CO. 159 OREGON STREET WILKES-BARRE, PA.

Sales and Engineering Offices in 55 Principal Cities

BREVITY—Identify by IEN - 8662 if you write the maker

FREE Repair Handbook

40 PAGES

170 ILLUSTRATIONS

Here are a few of the many Smooth-On repairs for plant, shop, and home found in this pocket-sized handbook:

- Sealing cracks and leaks in pumps, heaters, apparatus, piping.
- Tightening loose parts of apparatus, fixtures, tools.
- Stopping leaks in basement walls.
- Repairing cracked concrete floors.

Write for your free copy of the Smooth-On repair handbook today. The simple directions and clear pictures will help you to make hundreds of time-saving, money-saving repairs.

ONE OF THE TEN SMOOTH-ON REPAIR CEMENTS

Smooth-On No. 1, used on iron, steel, brass and other metals, is a quick hardening repair cement that comes in 7 oz., 1, 5, 20, or 100 lb. sizes. If your supply house hasn't it write us.

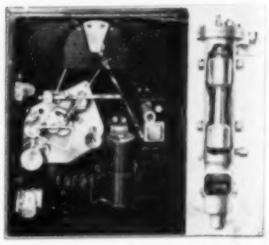
SMOOTH-ON SO-300

Smooth-On Mfg. Co., Dept. 1, 570 Communipaw Ave., Jersey City 4, N.J.
Please send me FREE Repair Handbook.
Name.....
Address.....
City..... *State*.....

BREVITY—Identify by IEN - 8663 if you write the maker

METER . . Differential transmitter and recorder for flow in pipe line

Source: MINNEAPOLIS-HONEYWELL REGULATOR CO. 4456 Wayne Ave., Philadelphia 44, Pa.



New flow meter is available as a mechanical unit with integral recorder or as an electrical transmitter to be used with the company's inductance-bridge receiver to measure and record flow in a pipe line. The equipment is available in three ranges of 53, 119.25 and 212 in. of water. It is suitable for pipe lines carrying 750 to 1,500 lb. of static pressure. It connects mechanically to its integral recorder or is employed with a three-conductor cable between the meter body and the remote receiver in the electrical installation.

The meter body encloses a bell floated in mercury with connections on the upstream and downstream side of the orifice in the pipe line. The bell changes vertical position with changing differential pressure. This movement is transmitted to the attached instrument in the mechanical assembly or transmits motion to an armature inside the core tube of the inductance-bridge transformer by means of a shaft in the electrical assembly. Resulting current is carried by the electrical connections to the receiver in this case.

The integrating mechanism is made up of a scanning unit which checks the flow rate as evidenced by the meter pen at 5-sec. intervals, an electronic detector relay that is actuated by the scanning unit to operate the counting mechanism and a motor-driven counter assembly to totalize the successive outward pulses from the detector relay to perform integration of the flow measurement. An electronic circuit detects the pen position so there is no load on the pen and no need for gearing, pawls, friction-drive wheels, or similar mechanisms. Suitable overload and air-release protection is integral.

BREVITY—Identify by IEN - 8664 if you write the maker

ADHESIVE . . Dry and liquid forms designed for general production uses

Source: HOUGHTON LABORATORIES INC. 888-92 N. 4th St., Olean, N. Y.

Araldite is the base element

Solid Type I is one of four new adhesives. It is supplied as a powder or in rod form and is cured by heating. The powder can be dusted over a large area or mixed with a filler or formed into pellets. It is employed in a technique similar to soft soldering in rod form. Shear strength is 5,000 lb. per sq. in. in a lap joint between aluminum and aluminum.

Liquid Type XV is a liquid form of the solid Type I. It sprays, brushes or dips on work parts which then can be stored as long as six months prior to final bonding.

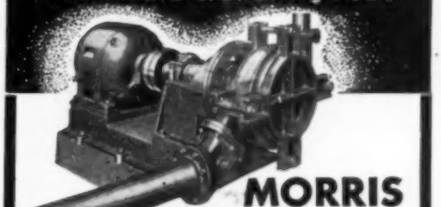
No. 101 is a cold-setting liquid to bond work made of ceramics, glass, hard rubber, metal, wood. It also can be prepared in putty form by addition of fillers.

No. 102 is a medium or low-viscosity material, similar to No. 101 after its solvent has been evaporated, and the film cured. It applies in bonding cloth to plastics, metals to plywood and in production of abrasive-faced paper.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8665 if you write the maker

The "One Best Way" for Many Materials-Handling Jobs



MORRIS *Centrifugal* SLURRY PUMPS

Coal mines, cement mills, glass works, stone-cutting plants, ore-treating plants, and a large array of chemical plants have found Morris Centrifugal Slurry Pumps to be the "one best" solution to many of their difficult materials-handling problems. Particle size is the only limiting factor, and this can be much larger than you think. Even thick sludges and fluids with viscosities as high as 7,000 SSU flow smoothly through the pump, insuring long and economical life of the wearing parts.

Lower Cost Per Ton or Million Gallons

Power, labor and maintenance costs are outstandingly low when figured on a year-in-year-out basis. The accuracy of the complete Morris assembly, the smooth, vibration-free operation, and the remarkable wearability of parts, all give maximum value for the dollar invested. Ask our engineers about your special problems, or write for Bulletin No. 181.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Branch Offices in Principal Cities

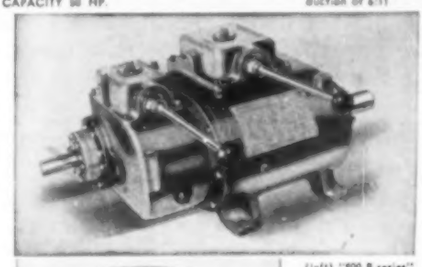
MORRIS CENTRIFUGAL PUMPS

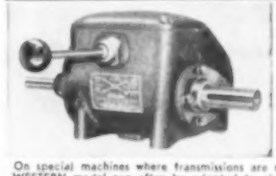
BREVITY—Identify by IEN - 8666 if you write the maker

WESTERN "SUPER" *with* 8 SPEED CHANGES

For use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills. CAPACITY 50 HP.

In geometric progression of 1.29 (total reduction of 4:1)





(left) "100 8 series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever (automotive type). Ratios—1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . we can supply the necessary *V-belts, sheaves, output pulleys, and motors from stock.*

up to 50 h. p. For Motorizing Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Gears, Ball Cutters, Gear Cutters, Die Grinders, Boring Mills, etc.

WESTERN TRANSMISSIONS
WESTERN MANUFACTURING CO., 5455 CENTER, DETROIT, MICHIGAN

BREVITY—Identify by IEN - 8667 if you write the maker

SQUEEZE PLAYS... *that save you money!*

Eliminate waste on hard-to-get-at jobs with these

YALE WORKSAVERS

SAVE SAVE SAVE—that's the story of YALE'S Stubby Worksaver! These pallet or platform trucks squeeze into small spaces to do big moving and lifting jobs... open up whole new areas of your plant to faster, more efficient materials handling...*cut your time and labor costs as much as 75%!*

The Yale Worksaver is a rugged trouble-free truck, too! A powerful electric drive unit, hydraulic lift and welded steel frame keep it on the job for years with a minimum of servicing.

YALE is the registered trademark of The Yale & Towne Manufacturing Co.

YALE & TOWNE

THE YALE & TOWNE MANUFACTURING CO., Dept. 369
Roosevelt Boulevard & Haldeman Avenue, Philadelphia 15, Pa.

I am interested in cutting my materials handling costs.
_____*Please send me free "Worksaver" literature.*
_____*Please send me free literature on Hand Trucks.*

Name_____
Company_____
Street_____ City_____ State_____

The Yale & Towne Manufacturing Co., Philadelphia 15, Pa.
In Canada write The Yale & Towne Mfg. Co., St. Catharines, Ontario.

BREVITY—Identify by IEN - 8669 if you write the maker

Rolling Steel Doors

Manually • Mechanically • Power Operated

No other type of door offers as many desirable features as a good Rolling Steel Door . . . open or closed, they occupy no usable space inside or outside the opening. All-metal construction assures permanence and a lifetime of continuous trouble-free service. Push-button controlled vertical roll-up action provides the quick, timesaving door operation demanded today by all industrial and commercial concerns. When you buy Mahon Rolling Steel Doors you get the latest developments in doors of this type — comparison will convince you. See Sweet's File for complete information, or write for Catalog No. G-52.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

BREVITY—Identify by IEN - 8670 if you write the maker

The FIRST Cable to link the Old and New Worlds

was completed by Cyrus W. Field Aug. 5, 1858—revolutionizing then existing communications.

JERVIS B. WEBB COMPANY was the FIRST to develop—

POWER and FREE CONVEYORS

— an outstanding development in materials handling.

More important than movement from "here to there" is the "pacing" the setting up the movement of materials so the operators can work in rhythm. Webb Power and Free Conveyor Material Handling Systems give this "rhythm" - yet allow off-the-line placing of loads to desired points without interrupting the flow. They reduce costs, increase efficiency and productivity.

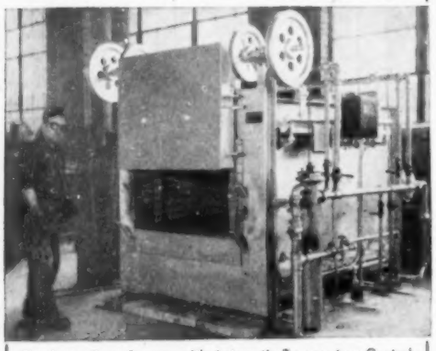
Offering complete flexibility in meeting production problems, Power and Free Conveyors can be tailor-made to your requirements —for any plant large or small. Some of their advantages include

- Loads are pushed, switched manually or automatically, can be lowered vertically, dispatched automatically by presetting carriers, and can be stopped momentarily anywhere along route.

CONVEYOR ENGINEERS AND MANUFACTURERS
JERVIS B. WEBB COMPANY
9915 ALPINE AVE. DETROIT 4, MICH.
OFFICES IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 8671 if you write the maker

FORGE AHEAD WITH AGF OVEN FURNACES



This large Oven Furnace with Automatic Temperature Control is shown in actual use in a well known Research Laboratory. Used for annealing, hardening, carburizing and a variety of controlled temperature work from 1300° to 1800° F., Special up to 2500°.

Write for Bulletin No. 200.

AMERICAN GAS FURNACE CO.
974 LAFAYETTE STREET, ELIZABETH 4, N. J.

BREVITY—Identify by IEN - 8672 if you write the maker

GAGE . . Electronic equipment reads static and dynamic pressures

Source: ELECTRO PRODUCTS LABORATORIES
4504B N. Ravenswood Ave., Chicago 40, Ill.

New design of the company's Pressuregraph, previously described IEN-11301-50, is stabilized against drift and change in temperature. Its adjustments have been simplified and it now can be employed to provide measurements from actuating points at distances to 200 ft. from the instrument in its operating location for a test.

The equipment includes a pick-up to thread into a pressure area such as the combustion chambers in an engine or the cylinders on an air compressor or into pressure areas in pipe lines carrying gases or liquids. The pick-up encloses a diaphragm that unbalances an electronic circuit when a pressure impulse is imposed. The unbalanced voltage passes through a control cabinet to an oscilloscope in which the sweep circuit has been adjusted to the speed of the equipment being tested.

Pressure readings are made on the band shown on the screen. Contour and shape of this band comprises a true pressure time curve. The equipment operates on 110 or 220-volt single-phase 50/60-cycle ac. Its housing measures 7 by 17 by 12 inches. Weight is 25 pounds. It applies with a DuMont Type 304-H or 208-B oscilloscope or equivalent.

BREVITY—Identify by IEN - 8673 if you write the maker

CONTAINER . . Corrugated fiber unit, delivered flat for assembly by user

Source: GAYLORD CONTAINER CO.
410 Pine St., St. Louis 2, Mo.

Drumpak trade names a corrugated-fiber container developed prior to World War II. It is now announced as available for general use in shapes that include square, rectangular, hexagonal or the octagonal unit shown in the illustration. Intended use of a particular unit determines material strength, size and shape.

The container in the illustration measures approximately 11¼ by 11¼ by 14 inches. Tops and bottoms are identical and include flaps that are doubled under and stapled so the shoulders they present apply under the shoulders of similar flaps on the container body to form a joint that cannot be pulled apart after steel strapping has been applied.

Quick set-up of the flat units received from the company is accomplished with a simple mandrel that holds the flaps in correct position to fit together and strap. The ultimate user can disassemble the container so it can be returned flat to the supplier for repeated use. Top and bottom trays can be fitted in to form a sift-proof seal for fine powdered products.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

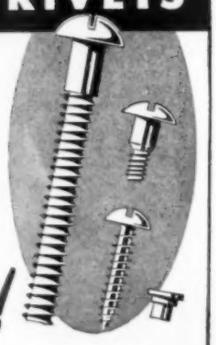
BREVITY—Identify by IEN - 8674 if you write the maker

Beaver-Bilt

SCREWS STUDS • RIVETS

Standard and Special Types Made for Your Particular Requirements

COLD HEADING PROCESS



Prompt Delivery!

URGENT ORDERS GIVEN SPECIAL ATTENTION
WIRE OR WRITE US ABOUT YOUR NEEDS

Beaver Industries
METAL FASTENER DIVISION
1300 WEST ADAMS STREET, CHICAGO 7, ILL.

BREVITY—Identify by IEN - 8675 if you write the maker

when the welder must wear a Hard Hat . . . give him a

CESCO Dual Protector

FOR Arc Welding

• Consists of choice of CESCO Helmets and Fiberglas Hat. Rustproof, adjustable, easy-tilt mechanism holds shield in any position. Spring clip connectors permit *fast, easy detachment* of shield from hat which can be worn separately.

FOR Gas Welding

• A combination of Model 542 CESCO *Speed-Shift* Goggles and Fiberglas Hat. Ball-and-socket mechanism for quick flipping of goggles onto hat or into position. Goggles can be flipped to top of hat when wearer does other work.

NEW CESCO DUAL SKULL AND EYE PROTECTORS

FIBERGLAS HAT with CESCO Helmet or No. 542 Goggles. Completely adjustable units. Hat is light and cool . . . safer than stainless steel . . . waterproof. Can be worn separately. *Write us for literature today.*

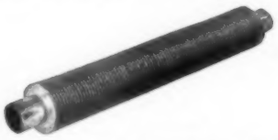
CHICAGO EYE SHIELD CO. • 2326 Warren Blvd., Chicago 12, Ill.

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Los Angeles, Montreal, Philadelphia, Pittsburgh, Seattle, St. Louis, St. Paul, Toledo, Tulsa

BREVITY—Identify by IEN - 8676 if you write the maker

"Ro-Fin" Tubes



For efficient heat transfer

Nearly 100 sizes of ROME EXTENDED SURFACE HELICAL FIN TUBING are in production . . . straight lengths . . . coils . . . U-bends . . . with or without threaded end connection, or for standard flare connections! Nearly all nationally known manufacturers specify "Ro-Fin"!

For Refrigeration Condensers • Steam Condensers
Fluid Recovery Condensers • Fan-Type Unit Heaters
Concealed Radiation Convectors • Diesel Engine Cooling

Write for Information on All Heat Transfer Problems!

ROME
TURNEY RADIATOR COMPANY

200 East Front Street Rome, New York

BREVITY—Identify by IEN - 8677 if you write the maker

MORE SPEED MORE SUPPORT

NEW "PADDOCK GUIDES" FOR BAND-SAWS

CUT AT ANGLE UP TO 45°

With this new PADDOCK BALL-BEARING GUIDE MODEL 20, blade can be held at an angle—permitting a 36 inch machine to cut material 22 inches wide at an angle up to 45° to any length. The guides are easily adjusted to width, thickness, and blade angle—the ball-bearing wheels reduce blade breakage and hold the working portion of the blade so that more and better work can be turned out. NOTE: Lower Unit is turned to show angular adjustment. Write for price and details on this NEW GUIDE today.

PADDOCK TOOL COMPANY
1418 Walnut St., Kansas City 6, Mo.
Guide Makers Since 1920

Paddock
BALL-BEARING
BAND SAW GUIDES

BREVITY—Identify by IEN - 8678 if you write the maker

KUSHION-TORK
WHAT IT WILL DO FOR YOU

The Cushion Torque of Kanti-Lever Couplings absorbs the hammer blows of sudden or reversing loads and dampens the torsional and radial vibration that cause wear, fatigue and sometimes failure of Motors, Speed Reducers, Ball Bearings and productive machinery. No other coupling is like the Kanti-Lever: It has a circular series of laminated Cantilevers of 200,000 lb. steel, operating in slots, the tapered sides of which automatically stiffen the Cantilevers under increased overloads. Special end-play up to four inches is possible without end thrust. The outer periphery of the Kanti-Lever is available as a brake drum for quick-stopping or reversing machinery. Send for Bulletin No. 28-N.

Kanti-Lever Couplings

4,000,000 h. p. in Use

MFRS. OF SECTIONAL STOCK RACKS

BROWN ENGINEERING CO.
122 NORTH 3RD ST. READING, PENNA.

BREVITY—Identify by IEN - 8679 if you write the maker

Better rubber products are made with Du Pont NEOPRENE

Neoprene nozzle guard protects car finishes . . . resists gasoline, oil and weathering

Hose nozzles on gasoline pumps won't scratch automobile finishes when a neoprene guard is used. This simple molded device is an excellent example of Du Pont neoprene at work. Neoprene is tough—has superior resistance to cutting, chipping and abrasion. It provides not only a resilient cushion but one that will effectively withstand the attack of sunlight and weathering, gasoline and oil. There's an added safety factor, too. For this durable guard is made of a special conductive neoprene composition that reduces danger from static electricity to a minimum.

In this instance, as in many other exacting industrial applications, articles and parts made of neoprene prove longer lasting, more economical. Leading rubber goods manufacturers use neoprene for their finest products. While Du Pont makes no finished products of neoprene, your rubber goods manufacturer will gladly tell you about neoprene products he supplies.

FREE! THE NEOPRENE NOTEBOOK

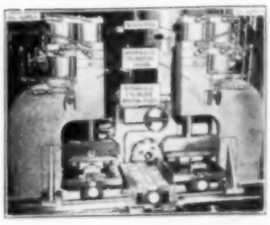
Full of interesting stories. New, unusual applications of neoprene to build new products . . . improve old products . . . reduce maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Division D-9, Wilmington 98, Delaware.

NEOPRENE
The rubber made by Du Pont since 1932
DU PONT
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

BREVITY—Identify by IEN - 8681 if you write the maker

CLAMP . . Air hydraulic fixture to hold and release work on a machine

Source: PLANET PRODUCTS CORP.
6303-7 Warrick St., Cincinnati 27, Ohio



New fixture, resembling a miniature hydraulic press, has been designed by the company to quickly grip or release work under push-button control by the operator. It employs shop air pressure to provide holding effort of 5 ton on 80-lb. air. It is shown in duplicate in the illustration. The two identical units face each other on the table of a Sundstrand milling machine, are used alternately to load and mill small pieces in the individual heads or together for long pieces that require holding at the two ends.

Air pressure applies in a cylindrical tank containing a supply of oil. This oil is released to flow through a bypass to the high-pressure cylinder, in which the work-holding piston is assembled, for low-pressure approach to the work. The bypass is opened by pressure build-up resulting from contact with the work. Then the oil is admitted to the inlet side of an intensifier. Outlet from this intensifier applies on the work-holding piston for capacity pressure.

The hydraulic cylinder and the intensifier are both standard items by Miller Motor Company of Chicago. The fixture was built to specification by the company using these units.

BREVITY—Identify by IEN - 8682 if you write the maker

SCAFFOLD . . Elevating platform mounts on a truck, hydraulic operation

Source: MOBILE AERIAL TOWERS INC.
1403-7 N. Clinton St., Dept. E, Fort Wayne 3, Ind.

Sky Hook Model 51 is a new assembly on a rotating base that mounts on a truck for mobile application. A worker standing on the platform operates controls to elevate himself at 25 fpm. to any position maximum at 51½ ft. above the ground. He also can rotate in a 280 deg. arc around the base. In "down" position the hinged boom rides horizontally over the truck cab for travel clearance of 11 ft. when assembled on an International L-152 truck. Width is 68 inches.

Equipment includes a safety belt and a control that employs a pushbutton to be used with a control lever, the latter being moved in the direction of desired travel. Maximum horizontal reach is to 37½ ft. from the center of the turntable with the platform 25 ft. above the ground. Outriggers with a center-to-center spread of 14 ft. provide stability. Rated capacity is 340 lb. on the platform. Shipping weight is about 4,200 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8683 if you write the maker

EXTRA Hand Protection at Lower Cost

PIONEER **STANZOILS**

Straight or curved finger styles

Non-slip fingers and palm—grip wet oily things as if dry

DuPont *milled* neoprene—long lasting, resistant to oils, acids, liquids

Greater tensile strength—greater tear resistance

Increase working efficiency and workers' hand comfort with PIONEER Stanzoils—for greater production, fewer injury claims. Stanzoils are made of *milled* neoprene exclusively—assures unequalled tensile strength, tear resistance. Their non-slip grip and efficient fit give workers new assurance and speed. Complete line of styles, sizes, weights, and colors. Write today for complete catalog.

N-31

Synthetic Rubber Division

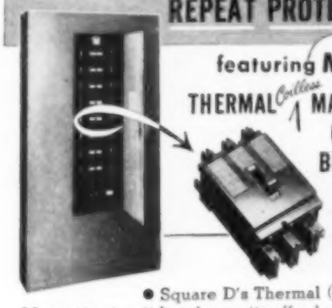
The PIONEER Rubber Company
635 Tiffin Road, Willard, Ohio • Los Angeles

STANZOIL PIONEER

OVER 30 Years OF QUALITY GLOVE MAKING

BREVITY—Identify by IEN - 8684 if you write the maker

NOW! ML Power Panels with REPEAT PROTECTION



featuring ML THERMAL (Coilless) MAGNETIC CIRCUIT BREAKER UNITS

Nothing to Burn Out • Nothing to Replace

● Square D's Thermal (*Coilless*) Magnetic circuit breaker units afford maximum flexibility in adding or changing ML power panel circuits. Repeat circuit protection eliminates parts replacements at increased savings in both time and materials.

Write for details. Square D Company, 6060 Rivard St., Detroit 11, Mich.

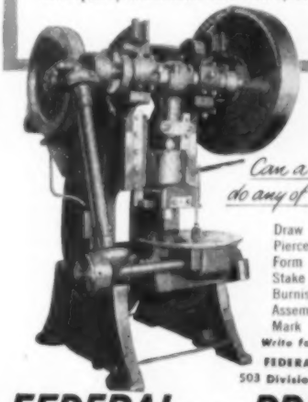
ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY
DETROIT • MILWAUKEE • LOS ANGELES

BREVITY—Identify by IEN - 8685 if you write the maker

For fast, accurate handling of many operations—safely!

If you have a problem of faster press room production, Federal Dial Feeds may be your answer. These rugged mechanical presses are showing the way to faster, safer, precision work to manufacturers everywhere. Carefully built of finest materials in six to 79 ton capacity. Automatic feeds and ejectors if desired.



Can a DIAL FEED do any of these for you?

Draw	Stamp
Pierce	Punch
Form	Crimp
Stake	Wire
Burnish	Broach
Assemble	Rivet
Mark	Burr

Write for new catalog

FEDERAL PRESS CO.
503 Division St., Elkhart, Ind.

FEDERAL DIAL FEED PRESSES
26 YEARS OF QUALITY CONSTRUCTION

BREVITY—Identify by IEN - 8686 if you write the maker

WATERPROOF MULTI-CONDUCTOR CABLE TERMINALS with new OKOPRENE END SEAL

Eliminate moisture, the cause of most terminal failures, with the new Okoprene End Seal. Terminating cables by this means is a quick, simple operation, eliminating the use of friction tape or windings which often trap moisture under the outer covering.

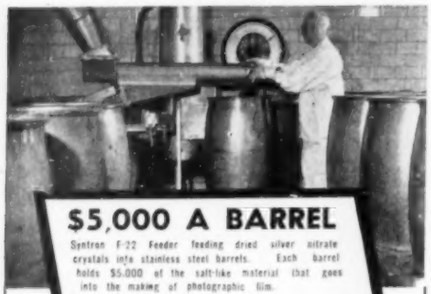
Okoprene End Seals are made from the same neoprene formula used in rugged Okolite-Okoprene cables. They are mechanically strong and resistant to light, air, ozone, oils and chemicals, as well as to moisture. Okoprene End Seals fit snugly over any cable sheath from ¾" to 2" in diameter; when filled with compound provide a neat, permanent, moisture-proof seal.

Use Okoprene End Seals on your next installation for completely trouble-free service. Write today for Okonite Bulletin IE-2091. The Okonite Company, Passaic, New Jersey.

THE BEST CABLE IS YOUR BEST POLICY

OKONITE insulated wires and cables

BREVITY—Identify by IEN - 8687 if you write the maker



$5,000 A BARREL

Syntron F-22 Feeder feeding dried silver nitrate crystals into stainless steel barrels. Each barrel holds $5,000 of the salt-like material that goes into the making of photographic film.

Syntron fingertip control of flow not only speeds up the operation—but prevents waste of costly material.

SYNTRON

"Vibra-Flow"

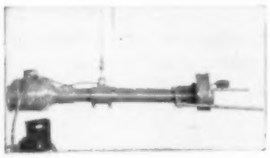
VIBRATORY FEEDERS

Will handle almost any type of bulk material—HOT, COLD, DRY, DAMP, FINE, LUMPY—at variably controlled rates from POUNDS to hundreds of TONS per hour—to MIXERS, OVENS, BELTS, BLENDERS, CRUSHERS, SCREENS, PACKAGING MACHINES, ETC.

WRITE TO—

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 8688 if you write the maker



MARSCHKE SWING FRAMES ARE DIFFERENT!

Size for size, Marschke Swing Frame Grinders are heavier than any other machine on the market. This extra weight is no accident—it's there—in the right places—to eliminate *vibration*, the "wheel eater." Marschke swing frames give you better two-way balance . . . smoother spindle rotation: bearing seats are *precision ground and honed* to assure perfect spindle alignment and bearing fit. These are only a few reasons why Marschke grinders are the best money can buy.

An inquiry will bring you interesting data

VONNEGUT MOULDER CORPORATION
1827 MADISON AVE. • INDIANAPOLIS 25, INDIANA

BREVITY—Identify by IEN - 8689 if you write the maker

In Any Location— A Quiet Spot for Telephoning

The modern, doorless Burgess-Manning Acousti-Booth provides a quiet spot for telephoning . . . in noisy locations anywhere. Thick walls of sound-absorbent material soak up noise. Conversations are clearer . . . "private."

ALSO
- Banks
- Bus Terminals
- Railroad Stations
- Utility Plants

MAIL COUPON FOR FREE BULLETIN BURGESS-MANNING COMPANY Architectural Products Division 5970-A Northwest Hwy., Chicago 31, Ill.

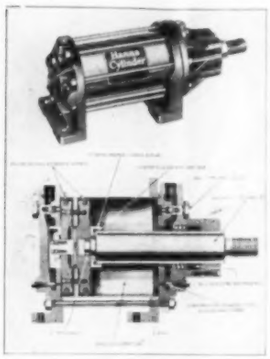
Please send booklet describing Burgess-Manning Acousti-Booths.

Name..... Firm Name.....
Street..... City.....

BREVITY—Identify by IEN - 8690 if you write the maker

CYLINDER . . For air, oil, water, 1½ to 14 in., pressure to 110 pounds

Source: HANNA ENGINEERING WORKS
1769 Elston Ave., Chicago 22, Ill.



Model 4M designates a new line of power cylinders for operation on relatively low pressure employing air, oil or water. The line includes a range of sizes from 2 to 14 in. in cylinder bore. There is also a 1½ in. diameter of somewhat different design and one in a range from 4 to 14 in. in which is an extra long cushion and a built-in speed box. All are available to specification for length of stroke and can be specified in various types of mounting including foot, clevis, flange, base, trunnion. There is also a double end unit in which the piston rod extends from both heads.

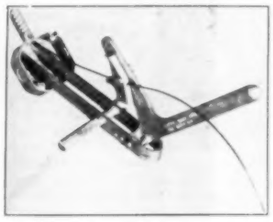
Construction is featured by a floating bronze cushion sleeve, cup-shaped in section, and sealed with cork rings on the piston rod. The floating action assures cushion alignment with the head. Cushioning is adjustable at a stainless-steel needle in each head. O-Ring seals between the piston rod and the piston itself prevent leakage along the rod. Expander springs are employed inside the cup packings on the piston.

Through-rods thread into a flange that forms a part of the assembly with the head at one end of the cylinder. These rods pass through the rear head and carry nuts to complete the assembly. The arrangement permits removal of the front head without taking the cylinder apart. A spring backs up the rod packings to maintain pressure at a desired point on the surface of the ground and polished rod.

BREVITY—Identify by IEN - 8691 if you write the maker

PULLING . . Lever operated tool pulls fishtape through a conduit

Source: MALLASCH-BRANDT ENGINEERING CORP.
1030-34 N. Orange Ave., Hollywood 38, Calif.



Steel fork forming the body of this new Little Giant pulling tool is equipped with teeth, a reversible handle and mounts an aluminum lever and pivoted pulling head. The tool applies in a standard outlet box, a gutter as a switch housing up to 8 in. size to pull fishtape through conduit in connection with wiring work.

The pulling head can be removed from the lever handle when the pulling capacity of the tool is not required. Then it can be held in the operator's hand as a means to grip the fishtape. List price is about $17.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

BREVITY—Identify by IEN - 8692 if you write the maker

MULTIPLE DRILLING

with a

MULTI-DRILL
INCREASES CAPACITY UP to 800%

ADJUSTABLE TO ANY HOLE PATTERN . . . FITS ANY DRILL PRESS

If your production requires drilling from 2 to 8 holes in a work piece a MULTI-DRILL will cut costs and speed output up to 800%. The MULTI-DRILL is universally adjustable to any hole pattern—is compactly built to permit easy, unhampered operation with drill jigs or other special features. Ruggedly built to take the wear and tear of high production work, the MULTI-DRILL will handle your long and short run multiple drilling jobs with ease—and economy. The MULTI-DRILL will drill on hole centers as close as ½"—handle drill sizes up to ⅝" in steel. Special adaptations available.

There is a Commander MULTI-DRILL Distributor in your area. Write for his name, literature and complete details.

COMMANDER MFG. CO.
4218 WEST KINZIE ST. CHICAGO 24, ILLINOIS

Product of *Commander* . . . Builder of Production Tools

BREVITY—Identify by IEN - 8693 if you write the maker

NO SPRINGS TO BREAK in the Nutting JACK IT'S ALWAYS DEPENDABLE

The Nutting Jack is the ONLY jack operated entirely by gravity and leverage. With no springs to break, there is no danger of your whole jack-skid system suddenly being put out of service.

One lift truck and two dead skids cost about the same as two Nutting Jacks and twelve semi-live skids. That's one reason why the Nutting Jack and Skid system can be such a money-saver in your plant. Material stored on semi-live skids is made mobile in a hurry. The jack may be coupled to one skid, then uncoupled and coupled to another faster than the time it takes to tell about it.

Send for Bulletin 48-JS

Look in your classified phone directory for your Nutting representative, or write for Bulletin 48-JS. It will pay you to get all the facts on this superior Nutting Jack-Skid handling system.

Nutting makes everything in floor trucks, wheel, casters.

NUTTING TRUCK AND CASTER COMPANY
2012 Division Street Faribault, Minnesota

BREVITY—Identify by IEN - 8694 if you write the maker

Everything's the same but the name Now it's . . . The LYON-RAYMOND Corporation

● Under its former name, LYON-Raymond Corporation linked 80 years of successfully manufacturing quality products through three generations of the LYON family with 30 years of manufacturing material handling equipment under the RAYMOND family management.

● Because the name LYON had no connection with present company management and caused confusion with similarly-named manufacturers, it was decided to shorten the name. It is expected that this new name — The RAYMOND Corporation — will better identify RAYMOND family management now and in the years to come.

● The company in the past has built up a reputation for quality produots and for pioneering in numerous types of *Hydraulic* Elevating Equipment. During the last several years, we have brought forth a notable number of "firsts".

● Today, under our new name — The RAYMOND Corporation — we will continue to help keep materials moving — in factories, in warehouses, in every field where electric trucks and hydraulic elevating equipment can be applied. And, while our name is changed, RAYMOND policies, services and quality of products will continue on the high standards already established.

Handy for short hauls — RAYMOND Hydraulic PALLET LIFT TRUCK

Here's the key to fast handling in cramped storage areas — it's RAYMOND Hydraulic Pallet Lift Trucks. These ruggedly-built trucks are highly maneuverable — help out on short hauls, ease peak period handling. Available in hand models or new rider-type powered models. Send for free Bulletins 207 and 750 today.

Lightweight Hydraulic PALLET LIFT TRUCK Capacity - 2,000 lbs.

RAYMOND

Formerly LYON-Raymond Corporation

Electric Industrial Trucks • Hydraulic Elevating Equipment

The RAYMOND CORPORATION
3547 SpaceMaker Street, Greene, N.Y.

BREVITY—Identify by IEN - 8696 if you write the maker

Plane Pilots... and Electronics Experts...

Everyone Can Count on VEEDER-ROOT

In every arm of the service, today, Veeder-Root Counters are performing countless confidential missions "by the numbers" . . . bringing raid and discomfort to the enemy.

Now if you, too, have a military mission in manufacturing that counts high up in the D-O's . . . and you are in need of some phase of *Countrol* . . . *then let's talk it over.* Get in touch with:

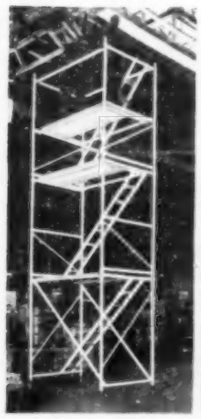
VEEDER-ROOT INC., Hartford 2, Conn.

BREVITY—Identify by IEN - 8697 if you write the maker

BUY MORE "TIME ON THE JOB" with these ALUMINUM SCAFFOLDS

On almost any maintenance or electrical job one of the things you must consider is "set-up" time . . . how long it takes your men to *get ready* to work.

That's where these Aluminum Sectional Ladder Scaffolds and Aluminum Sectional Rolling Scaffolds save you time and money . . . by cutting "set-up" time to the bone and giving your men more "time on the job".



Here's why:

- It's easy to carry the light component parts to the job area.
- Scaffolds go up faster because of prefabricated design and snap-on braces.
- Scaffold quickly adjusts to proper height.
- Easy-to-climb stairways help get your men on the job . . . fast.

These easy-to-handle Scaffolds save time in dismantling, too. Non-rusting aluminum requires minimum maintenance. Used by leading maintenance men and electricians.

***Get all the facts!* Write for free Bulletins PSS-20 and PSS-22.**

LADDERS and SCAFFOLDS FOR ANY PURPOSE
Any Place—Any Time

Gale Metal Ladders Scaffolding

for Greater Safety...Efficiency...Economy

THE PATENT SCAFFOLDING CO., Inc.

38-21 12th Street, Dept. IEN, Long Island City 1, N. Y.

See Your Classified Telephone Directory for Nearest Office

BREVITY—Identify by IEN - 8699 if you write the maker

PRESS . . Hand hydraulic assembly based on company's push-pull jack

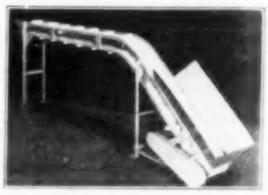
Source: OWATONNA TOOL CO.
371 N. Cedar St., Owatonna, Minn.

New assembly of floor stand and rod-connected heads is employed to mount the company's hand-hydraulic jack, previously described IEN-4738-51. The assembly is known as Type OTCY-102. The base measures 20 by 21 inches. Height from floor to the press plate is 32½ inches. Distance from the ram to the top of the press plate is 9½ inches. Space between the uprights and the press plate is 10½ inches. The jack is operated by the hand pump at the rear of the assembly. Pressure point is adjusted by turning the vertical screw.

BREVITY—Identify by IEN - 8700 if you write the maker

CONVEYING . . Light duty belt unit, 6 to 24 in. width, to 100 ft. length

Source: KLAAS MACHINE & MFG. CO.
4326 E. 49th St., Cleveland 25, Ohio



Drive is by a ¼-hp. motor with chain and sprocket connection to the belt pulley at the foot of the incline end of this new light-duty conveyor. The belt is equipped with canvas cleats at regular intervals. The assembly is in a light structural-steel frame. Various arrangements of incline and straight run, as well as mounting height, can be specified.

BREVITY—Identify by IEN - 8701 if you write the maker

TESTING . . Magnetic finder for outlets in steel underfloor raceways

Source: NATIONAL ELECTRIC PRODUCTS CORP.
1301 Chamber of Commerce Bldg., Pittsburgh 19, Pa.

Outlet Finder is a new assembly of permanent magnet inside a brass housing measuring 2¼ by 2¼ inches. Weight is 2¼ pounds. The unit is placed on a wood, concrete or linoleum floor and is moved along by hand in search of a steel underfloor raceway outlet. The magnet sets up noticeable drag when the unit is passed over the steel duct. This drag increases as a submerged outlet is approached. Maximum is reached when it is centered over the outlet. Penetration capacity is to 1½ inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8702 if you write the maker

McDonald CLEARVUE DUSTFOE RESPIRATOR

APPROVED! **BY WORKMEN**
Light in weight—comfortable—does not interfere with vision or working freedom

APPROVED! **BY MANAGEMENT**
Long lasting—sturdy—easily washed and sterilized—every part replaceable

APPROVED! **BY U.S. BUREAU OF MINES**
Approval No. 2148 for all dusts including lead and other toxic dusts.
Approval No. 2147 for pneumoconiosis-producing and nuisance dusts and mists

Write for Bulletin and Prices

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

BREVITY—Identify by IEN - 8703 if you write the maker

INDUSTRIAL INKS To Mark Anything!

Production engineers use "Clear Print" Wood Block Stamp Pads and Opaque Inks for the best clear, sharp, fast drying impressions. To cut down on lost shipments and rejected assemblies because of poor identification, use "Clear Print" for shipping room direction stamps and parts numbers. You are assured of permanently legible markings. Many bright visible colors available.

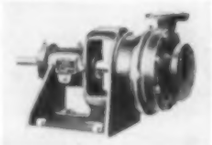
- For marking on non-porous materials such as:
- WOOD, METAL, GLASS, PLASTIC, RUBBER, PAPER AND MANY OTHERS.

PHILLIPS PROCESS CO., INC.
192 MILL ST., ROCHESTER, 14, N. Y.
L. A. PHILLIPS, President

BREVITY—Identify by IEN - 8704 if you write the maker

No other line is so complete

Fit your pumping need exactly by selecting from the Worthington line of CN-DN standard centrifugal pumps—10,000 combinations in all!



- *Capacities* from 10 to 1800 gpm
- *Heads* up to 535 ft.
- *Casings* in 50 sizes
- *Frame-mounted designs* in 200 combinations
- *Packing:* conventional or mechanical seal
- *Drive:* "any-drive" (frame-mounted model CN has shaft extension to take any drive) or built-in motor (Monobloc DN has motor and pump perfectly balanced as a single unit on a common shaft)

Worthington Pump and Machinery Corporation, Pump and Compressor Merchandising Division, Harrison, N. J.

See Your Worthington Distributor

WORTHINGTON

PC3.4 THE GOOD RIGHT HAND OF INDUSTRY

BREVITY—Identify by IEN - 8705 if you write the maker

This low-cost, portable pump will MOTORIZE your hydraulic equipment

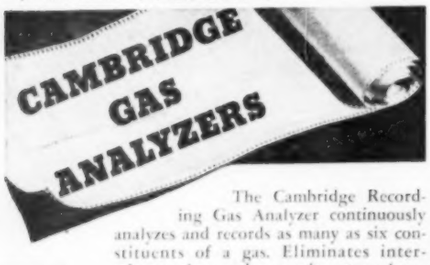
Eliminate costly hand pumping: This electrically-driven pump serves one or more rams. Production zooms — sometimes it triples. Great on presses, pipe benders, etc. Write for catalog. Buy from leading supply houses.

- P-181 Pump (above) combines motor, valves, pump and oil reservoir in one compact unit.
- 10,000 p.s.i. hydraulic pressure. Weight—only 84 lbs.
- Low Cost

Blackhawk Mfg. Co., Dept. 1-1591
Milwaukee 1, Wis.

BLACKHAWK

BREVITY—Identify by IEN - 8706 if you write the maker



The Cambridge Recording Gas Analyzer continuously analyzes and records as many as six constituents of a gas. Eliminates intermittent, slow and expensive manual gas analysis. Accurate . . . Sensitive . . . Simple. No moving parts; utilizes thermal conductivity principle.

Makes possible substantial savings in the operation of kilns, production of inert gases, and in metallurgical, petroleum, and other chemical processes. Single- and Multi-point instruments are available for a wide variety of applications.

Send for literature mentioning application

CAMBRIDGE
INSTRUMENT COMPANY, INC.
3710 Grand Central Terminal, New York 17
Pioneer Manufacturers of
PRECISION INSTRUMENTS

BREVITY—Identify by IEN - 8707 if you write the maker

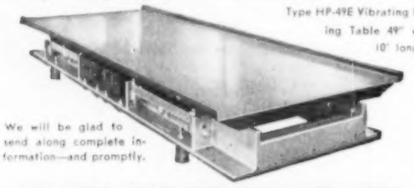
Low head Barrel Packer

VIBRATING PACKERS

Jeffrey electric vibrating Packers provide real economy in packing operations.

Reduce size of containers. Increase their capacity Cut shipping costs

As shown, Jeffrey Packers can be supplied with various diameters of platen head to take barrels, cartons, etc., or with vibrating deck to provide conveying action during the packing operation. They are well built and sturdy—will give years of satisfactory service.



Type HP-49E Vibrating Packing Table 49" wide, 10' long.

We will be glad to send along complete information—and promptly.

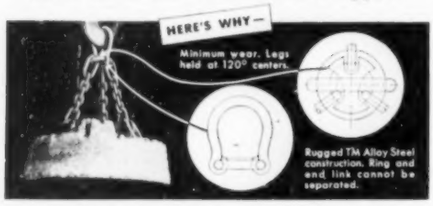
JEFFREY
ESTABLISHED 1877
THE JEFFREY MANUFACTURING CO.
914 N. Fourth St., Columbus 16, Ohio

BREVITY—Identify by IEN - 8708 if you write the maker

TM *Alloy Steel Downtown*

Frictionless MAGNET CHAINS

DO MORE WORK, LAST LONGER, COST LESS than conventional types!



On-the-job tests prove TM Alloy Steel Downtown Magnet Chains superior to any other three-leg assemblies on the market. Patented design of end link and horizontal ring with special locating plate keep chain legs at 120° centers. This prevents ganging-up, excessive friction and twisting . . . assures level lifts. Long life, safety and economy is assured by TM Alloy Steel Construction. Great strength, high resistance to abrasion, grain growth and shock at sub-zero temperatures are only a few of the TM Alloy Steel qualities. Send coupon!

S. G. TAYLOR CHAIN COMPANY, Hammond, Indiana

S. G. TAYLOR CHAIN COMPANY
Dept. 4, Hammond, Indiana
Rush literature and prices on TM Alloy Steel Downtown Magnet Chains.
Name _____
Address _____

TAYLOR MADE
A GREAT NAME IN *Chain* SINCE 1873

BREVITY—Identify by IEN - 8709 if you write the maker

PACKAGING . . Capping machine applies, seals container closure caps

Source: UPRESSIT PRODUCTS CORP.
420 Lexington Ave., 6th Floor, New York 17, N. Y.

Containers with openings to take the company's spring-metal closure cap are placed on the flight-equipped chain conveyor in this new automatic machine to be indexed at the rate of 21 containers per minute under feed chutes and heads for cap application and sealing. Movement is from left to right as the machine is shown in the illustration. Indexing action of the conveyor chain is tied in positively with the closing and roll-type crimping station. The machine measures 6½ ft. in length by 40 in. in width and stands 6 ft. in height. It weighs 633 pounds. Container range is from pints to 2-gal. units.

The spring-metal caps feed down the first of the two chutes to be picked up one at a time from the bottom as each container comes by. The capped container is positioned by the chain under a vertically moving head. This head comes down around the caps and closes its fingers in. Continuing movement toward the right brings the container into place under the second chute where a sealing ring is dropped in place and is rolled down around the closure cap by horizontal idler wheel. Final operating position brings the container under a set of revolving rolls that swing inward to crimp the ring under the bottom lip of the container opening.

The ring has an inward facing tab that is used to remove it by hand when the container is to be opened. As soon as it is off, thumb or finger pressure on top of the cap causes the cap to spring open for removal by hand. The cap is not destroyed and can be replaced and closed into holding position by closing the fingers in radially, also by hand. The machine is driven by a ½-hp. motor.

BREVITY—Identify by IEN - 8710 if you write the maker

CONVEYING . . Telescopic roller unit presents an extended stepless surface

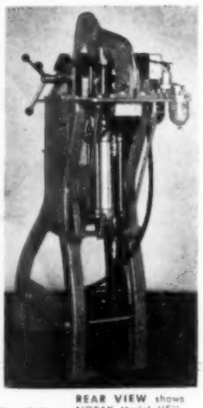
Source: WILKIE CO.
5518-22 Arch St., Philadelphia 39, Pa.

Rollers take the place of wheels, previously described IEN-7236-49, in this new design of the company's portable telescopic conveyor. It is available in 12 and 18-in. widths and in nine lengths which can be extended to a maximum of 20 feet. When fully extended the sections pull up even so there is no step down between them. Locks on the caster wheels hold the conveyor in required position. The rolls are mounted on ball bearings.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8711 if you write the maker

Leather Crimping Machine *Air-Powered* by NOPAK Cylinder



The crimping machine pictured was developed by Western Supplies Co. of St. Louis. It "makes shoes fit better" because it preforms leather upper sections under heat and pressure, so that they can be subsequently drawn snugly against the lasts.

NOPAK Air Cylinder Power was chosen to reduce operator fatigue and increase production . . . to utilize controlled line pressure over the full range of crimping operations . . . to eliminate working parts . . . and because NOPAK mounting characteristics were best fitted to the machine. A study of the cylinder's construction indicated there was "practically nothing to wear out." It was also found to meet required standards at a comparatively low price.

REAR VIEW shows NOPAK Model "E", 4" x 8" stroke Cylinder, with self-regulating cushion at both ends.

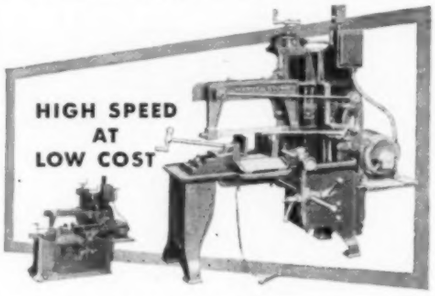
GALLAND-HENNING MFG. CO.
2760 S. 31st Street • Milwaukee 46, Wis.

Representatives in Principal Cities.

Write for Bulletin SW-1 or refer to Sweet's File for Product Designers.

NOPAK
VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE

BREVITY—Identify by IEN - 8712 if you write the maker



For tool room, stockroom, or maintenance shop, this 6" x 6" capacity hack saw is ideal when you want speed, accuracy, and economical operation at lowest possible investment.

Embodies similar design principles and features of MARVEL heavier duty production saws. Its shaper-link action that provides quick return stroke, and its heavy pressure screw feed are two exclusive MARVEL features that provide FASTER cutting than can be obtained with any other metal saw in its price class.

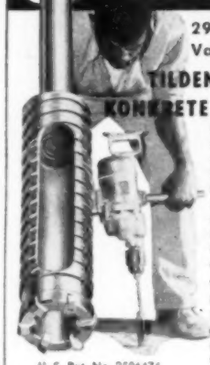
Single speed, 2-speed, and 4-speed models are available, to suit all types of applications where materials of different hardness and alloy characteristics are to be cut. Cabinet base or open-leg base are optional.

Metal Cutting **MARVEL SAWS**
Better Machine Better Made

ARMSTRONG-BLUM MFG. CO.
"The Hack Saw People"
5700 Bloomingdale Ave. Chicago 39, U.S.A.

BREVITY—Identify by IEN - 8713 if you write the maker

The World's Most Efficient
CONCRETE DRILL



29 Std. Sizes — Wide Variety in Drill Shanks

TILDEN ROTARY KONKRETE KORE DRILLS

Revolutionary Tilden Drills available in 29 standard sizes, from 3/16" to 4". Larger sizes to 8" in diameter and lengths up to 36" made to special order. A variety of shank lengths and fittings make these drills versatile and efficient.

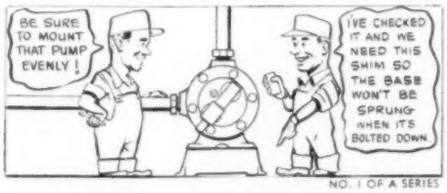
TOP PERFORMANCE: 200 inches of concrete drilled before resharpening—drills glass, flat steel and rock in concrete—drills up to 6 inches per minute—makes straight clean holes—uses ordinary electric drills for fast, quiet cutting action.

U. S. Pat. No. 2506474

Write now for illustrated catalog on Konkrete Kore Drills—the world's most efficient.

Tilden Tool
MANUFACTURING COMPANY
Branch Offices: 209 LOS MOLINOS • SAN CLEMENTE, CALIF.
1995 N. Fair Oaks, Pasadena 3, Calif. • 144 W. Washington Blvd., Chicago 7, Ill.

BREVITY—Identify by IEN - 8714 if you write the maker



NO. 1 OF A SERIES

HOW TO GET THE MOST WORK OUT OF YOUR

VIKING PUMPS

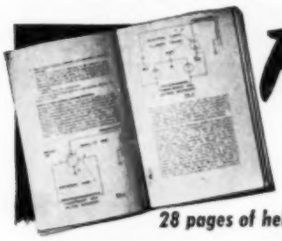
When mounting a Viking Rotary Pump and bolting it down, be sure that the base is not sprung. Bolting the pump down over an uneven surface may cause binding and heating in the stuffing box. It may cause working parts of the pump to bind and wear beyond repair in a short time. The pump must be free enough to turn the shaft by hand.

Get EXTRA wear out of your Viking Pumps by giving them EXTRA care. The Viking Service Manual tells you how. It's a handy, illustrated booklet giving you practical help in mounting, operating and maintaining Viking Pumps. Write for your copy of Manual F today. It's FREE.

VIKING AN HONORED NAME IN PUMPING

Viking PUMP COMPANY
Cedar Falls, Iowa

BREVITY—Identify by IEN - 8715 if you write the maker



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FROM WESTERN PRECIPITATION

28 pages of helpful facts about

COTTRELL ELECTRICAL PRECIPITATORS

THIS HELPFUL 28 PAGE BOOKLET—Prepared by Western Precipitation Corporation, *pioneers in the commercial application of* COTTRELL *Precipitators*—summarizes and illustrates many of the basic facts you should know about COTTRELL Precipitators for use in recovering industrial dusts, mists, fogs, fumes, fly ash and other suspensions from gases. Written particularly to answer questions of design engineers, plant engineers and others interested in COTTRELL Precipitators, this booklet outlines the various types available, how they operate, principal types of electrical systems and rectifiers, shell construction, other helpful data.

As long as the supply lasts, a free copy will be sent on request to our nearest office. Write for Bulletin No. C103 today!

WESTERN Precipitation CORPORATION

ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
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PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

BREVITY—Identify by IEN - 8716 if you write the maker

B.F.Goodrich

HERE'S HELP . . . on industrial tire and wheel problems

YOU need two things for maximum industrial tire and wheel service:
(1) built-in tire quality and
(2) the *right* tire for the job.

With B. F. Goodrich, you get both of these factors.

In the first place, BFG's are built to give long, trouble-free service and maximum operating results.

Secondly, your local B. F. Goodrich dealer has been specially trained to give you a complete industrial Tire & Wheel Analysis service.

HERE'S HOW THE TIRE AND WHEEL ANALYSIS PLAN HELPS YOU

● Your B. F. Goodrich dealer will study your operation. He'll analyze loads, hauls, equipment, floors and hauling surfaces, and then make specific recommendations regarding tire and wheel types and sizes. He'll also offer maintenance suggestions you'll find extremely helpful. His recommendations are impartial because only BFG has a *complete* line of solids, semi-pneumatics and pneumatics. There's no obligation for this service . . . longer industrial tire life is yours for the asking.

A similar program is available for the manufacturers of industrial hauling equipment.

Use the coupon for full details of this plan.

The B. F. Goodrich Co.
Department TW-127
Akron, Ohio

Please give me additional information on your new Tire and Wheel Analysis plan.

Name_____
Title_____
Company_____
City_____ State_____

BREVITY—Identify by IEN - 8718 if you write the maker

LATHE TOOL . . Carbide bit holder for round, square and triangular bits

Source: FIRTH-STERLING STEEL & CARBIDE CO.
3111-15 Forbes St., Dept. IEN, Pittsburgh 13, Pa.

New design of the company's Mechanigrip carbide-bit holder now positions the bit so chips curl against the carbide and not over the tool-steel holder. The problem of chip erosion has been eliminated. The holder is available in designs for round, square and triangular bits, each of which is held mechanically by a centering spring, clamping strap and clamping screw and is backed up also by a screw.

Shank sizes range from ¾ by ¾ in. to 1 by 1½ in. in sections and are 6 and 8 in. in length. Right and left-hand designs are included in the line. Square bits measure ⅝ to ¾ in. and are 1½ in. in length in standard design.

BREVITY—Identify by IEN - 8719 if you write the maker

PUMP . . Rotary vacuum unit reduces pressure to 5 microns absolute

Source: F. J. STOKES MACHINE CO.
5956 Tabor Road, Philadelphia 20, Pa.

Will clear slugs of liquid

Model 812-F is a new size in the company's Microvac pump, previously described IEN-7623-45. The new unit rates 500 cfm. displacement at 390 rpm. It is driven by a 25-hp. motor mounted on top of the housing. Overall dimensions are 36 by 38 by 76 inches. Weight is 2,400 pounds.

The piston, a cylindrical unit equipped with a sliding vane that moves in a rocking head, surrounds an eccentric mounted on the drive shaft. Each revolution of the eccentric results in complete discharge of air.

The only valve is on the discharge side. It will handle slugs of liquid that may be drawn in without injury to itself or the pump. Sealing oil held in the base is forced to the bearing surfaces by atmospheric pressure. A clarifier mounted beside the pump removes moisture continuously.

BREVITY—Identify by IEN - 8720 if you write the maker

WRENCH . . Special spanner unit adjusts thrust nut on a steam turbine

Source: PROTO TOOLS
2207-11 Santa Fe Ave., Los Angeles 54, Calif.

Length is about 3 ft. and distance between the centers of the two engaging lugs on this new spanner wrench measures 13⅝ inches. The wrench weighs 33 pounds. It was supplied to a power station to adjust the thrust nut on a 60,000-kw. turbine. Material in the wrench is alloy steel.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

BREVITY—Identify by IEN - 8721 if you write the maker

PAGE FENCE - Since 1883

• AMERICA'S FIRST WIRE FENCE •

Sabotage is a danger which calls for vigilance day and night. Property line vigilance is the job for Page Chain Link Fence, now as it has been for more than 60 years. Consult the nearby, long-experienced Page Fence engineering and erecting firm, which will submit cost estimates without obligation. Name and address will be sent with illustrated fence data on request.

***Write** to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.*

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

BREVITY—Identify by IEN - 8722 if you write the maker

SPEED UP SMALL PARTS ASSEMBLY

Parts feed automatically toward front—end reaching and fumbling.

Bins taper toward front to form convenient semicircle—keep all bins within easy reach.

Stacking, locking construction for rigid set-ups, easily changed when necessary.

All-welded construction. Smooth, folded edges.

New-design, adjustable hoppers provide increased capacity and permit regulated flow of parts according to sizes and weights.

Two-sizes—tapered or straight sides.

IMMEDIATE DELIVERY

Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main Street, Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

BREVITY—Identify by IEN - 8723 if you write the maker

Fast trip for stampings

Stampings move quickly and continuously from one punch press to another — or direct from press to tote box — on Rapistan Press-veyors*! These sturdy, cleated belt conveyors deliver stampings at a convenient working height . . . reduce damage to small parts . . . speed up production . . . cut handling costs. *Write for complete details!*

The RAPIDS-STANDARD CO., Inc.
434 Rapistan Building
Grand Rapids, Michigan

Rapistan® MATERIAL flow EQUIPMENT

*T.M.

Representatives in Principal Cities

CONVEYORS: Power or Gravity, Portable and Stationary
Also a complete line of CASTERS & HAND TRUCKS

BREVITY—Identify by IEN - 8724 if you write the maker

NOW

an easy way to identify stainless steel "Specs"

Here's a timesaver you will find invaluable . . .

Containing much salient data on "specs," this new Frasse chart will prove a boon when you're working with stainless steels. With it a specified steel can easily be identified in less than 30 seconds—saving valuable time normally spent thumbing through individual specifications.

Compiled by Frasse Technical Service, the chart shows chemical analysis requirements for each of 37 Military, Army, Navy, Aeronautical, and Federal specifications. Also lists specified forms (bars, wire, etc.) and nearest corresponding SAE, AISI and AMS type numbers.

Printed on durable cardboard stock, the chart is regular file card size—can be tacked on wall, filed in desk drawer, or slipped under glass for ready reference.

It's furnished without charge, of course—so make your job an easier one! Send the IENquiry for this helpful chart today—and remember that Frasse Technical Field Service is always available to assist you with applications involving stainless steels.

Peter A. FRASSE and Co., Inc.

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Call FRASSE 1st

for Stainless Steels
Bars • Sheets • Strip
Plates • Angles • Wire
Tubing • Pipe • Fittings

BREVITY—Identify by IEN - 8725 if you write the maker

BREVITY—Identify by IEN - 8726 if you write the maker

BREVITY—Identify by IEN - 8727 if you write the maker

Let HARPER Help. Here are *all* kinds—with exactly the right alloy, size, type and finish you need. Harper specializes in nonferrous and stainless steel fastenings for services in all industries where resistance to corrosion, abrasion, heat and stress is vital. Over 7000 items—bolts, screws, nuts, rivets, and accessories—in stock ready for immediate delivery from warehouses and distributors, coast to coast. For latest catalog, mail coupon.

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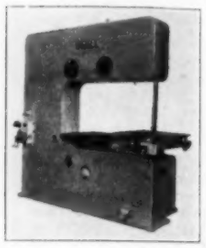
HARPER
EVERLASTING FASTENINGS

SPECIALISTS IN ALL NON-CORROSIVE METALS

BREVITY—Identify by IEN - 8728 if you write the maker

SAWING . . Band saw machine, 60 in. throat, 40 to 10,000 fpm.

Source: DOALL CO.
252-56 N. Laurel Ave., Des Plaines, Ill.



New frame providing a throat dimension of 60 in. and maximum work height of 36 in. assembles standard components in the company's band saw. Drive is by a 7½-hp. motor to provide a machine capable of normal band sawing and also of filing, polishing and friction cutting. Equipment includes the company's standard hydraulic-feed table providing a 16-in. stroke.

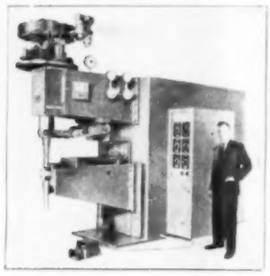
The table tilts 45 deg. to the right and 10 deg. to the left for angle cut and bevel operation. Hydraulic pressure equipment is built into the machine. Feed is controlled at the front of the table. When this table has been removed the lower guide can be raised above the standard table top to assist in manipulating large metal sheet for contour friction cutting.

A welding unit is supplied to join and anneal saw bands to 2 in. in width. This unit includes a motor-driven grinder and a blade-squaring shear. Job-selector dials cover blade speed and feed recommendations for all types of materials on which the machine can be applied.

BREVITY—Identify by IEN - 8729 if you write the maker

WELDING . . Spot weld machine rates two pieces of ¼ in. aluminum

Source: SCIAKY BROS. INC.
4917 W. 67th St., Chicagd 38, Ill.



Type PMC06ST-400-36 is a new size in the company's press-type Modu-Wave air-operated and electrically-controlled three-phase spot welder. The new machine will take two thicknesses of aluminum measuring ¼ in. each and will produce spot welds meeting requirements of Specification MIL-6860. The machine provides an electrode force that is adjustable to 23,000 pounds. Input rating is 400 kva. Solid copper bars with sliding silver contacts at each terminal transmit secondary current from the transformer to the moving electrodes.

Standard controls include timers for squeeze, weld interval, hold, off, heat, current decay, cool, recompression delay. Throat depth measures 36 inches.

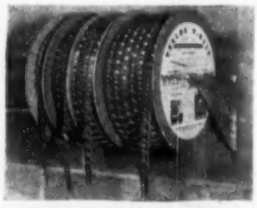
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

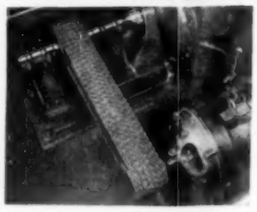
FIND WHAT YOU WANT?
Products and functions are indexed on page 114

BREVITY—Identify by IEN - 8730 if you write the maker

VEELOS Pays for Itself

The Adjustable V-Belt





In Inventory

Veelos reduces required v-belt stocks. Just 4 reels of Veelos cover *every* v-belt need (up to 316 sizes) in the O, A, B and C widths. Stock only one reel for each width of belt you use—and *any length is readily available.*

In Maintenance

Veelos can be installed quickly and easily without dismantling outboard bearings or moving motor. Individual belts can be adjusted by simply removing or adding links.

In Operating Efficiency

Uniform tension can be maintained on all Veelos belts to provide vibrationless, full power delivery. Simple adjustment of each belt means that *matched sets stay matched.*

Write for your copy of the Veelos Data Book. It gives complete facts.

MANHEIM MANUFACTURING & BELTING CO.
651 Manbel St., Manheim, Pa.

VEELOS THE LINK V-BELT

Adjustable to any length • Adaptable to any drive

BREVITY—Identify by IEN - 8731 if you write the maker

Goes on fast, saves time, cuts costs. Ideal for low-temperature applications—cold water lines, cold air ducts, refrigeration lines. Also used extensively for warm water lines, warm air ducts and for sound deadening.

WRITE NOW for free sample of MYSTIK Self-Stik DRI-PIPE Insulation to Mystik Adhesive Products, 2644 North Kildare, Chicago 39, Illinois

BREVITY—Identify by IEN - 8732 if you write the maker

YOU CAN'T BUY better dial thermometers

Compare the Taylor 8-inch 22K Series Dial Thermometers with any other dial thermometers on the market today! You'll find them far ahead of the field on at least five points:

1. Easy reading, 8-inch black metal dial with white figures and graduations.
2. Wedge-shape pointer directs your eye instantly to indication.
3. Many standard dials for ranges from minus 200°F. to plus 1000°F.
4. Mercury, vapor, gas or organic liquid actuations give required characteristics for any measurement problem.
5. Die-cast, compact, moisture-and-dustproof case.
6. Two types of mounting—bottom-connected (shown) or back-connected with flush-mounting flange (not shown) for panelboard installation.

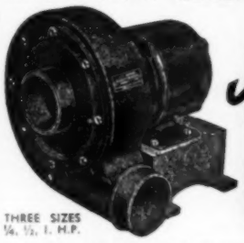
For complete details, write for Catalog 22K. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow, liquid level, load, speed and density.*

Taylor Continental

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

BREVITY—Identify by IEN - 8733 if you write the maker

READY TO RUN—IMMEDIATE DELIVERY!



Sutton MOTOR DRIVEN PRESSURE BLOWERS

THREE SIZES ¼, ½, 1 H.P.

MADE OF LIGHT WEIGHT CAST ALUMINUM ALLOY

CENTRIFUGAL TYPE designed to deliver an even, non-pulsating flow of air for blowing or exhausting. Universal as to rotation and discharge. Direction of discharge may be changed to any of eight 45 degree positions. • Housing, base, supported, and impeller are constructed of cast aluminum alloy to reduce weight and increase strength. Straight wall construction reduces windage and increases efficiency. • Powered by standard 3450 r.p.m. direct-connected 60-cycle ball bearing motor in choice of open or totally enclosed types. Three sizes: ¼, ½ and 1 H.P. with capacities from 100 to 800 cu. ft. per min. at static pressures from ½" to 6".

USED FOR removing dust from grinding, buffing, and polishing equipment; for conveying cotton, wool, saw dust, shavings, etc.; for exhausting smoke fumes and vapor; to furnish blast for forges, furnaces, etc., and for cooling and drying purposes.

WRITE FOR LITERATURE AND PRICES

Sutton Manufacturing Corp.
112 W. WILSON AVENUE NORFOLK, VIRGINIA

BREVITY—Identify by IEN - 8734 if you write the maker

Here's the right iron for

EXTRA HEAVY DUTY

SOLDERING

Super-powered at 700 WATTS!

The ideal Iron for heavy soldering and large branders. 700 watts with tip 1¼ inches in diameter. Heavy duty construction from tip to cord terminal. Rugged long-life heating element with case made from solid hexagonal steel for extra strength. Operates on any cycle AC or DC current; Furnished for either 110 or 220 volts.

HEXACON MODEL 700

$30.00

An Iron for Every Soldering and Branding Need

There is a quality made Hexacon Iron for every use in manufacturing or repair work. Hexacon irons include screw tip, plug tip and hatchet types with tip diameters from ⅛" to 1¾"—from 40 to 700 watts. Write for illustrated catalog.

HEXACON

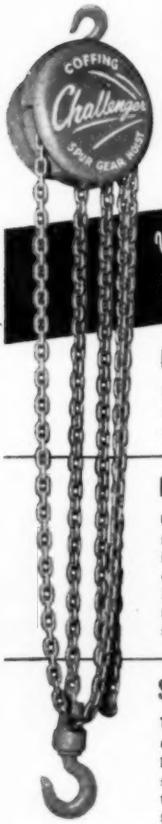
HEXACON ELECTRIC COMPANY

155 WEST CLAY AVE. • ROSELLE PARK, NEW JERSEY

BREVITY—Identify by IEN - 8735 if you write the maker

NEW

Coffing Challenger



What you have been waiting for in a Spur-Gear Hoist

Light Weight

Carry it with one hand. One-ton model, with coil chain for standard lift of 8 ft., weighs only 38 lb.

Ruggedly Dependable

Use it year after year. Long life is built in . . . sealed in. Housing is formed steel plate — will not crack under sudden shock loads. Back plate is laminated for extra rigidity. Hoist mechanism has sealed-in lubricant.

Safe

Trust it to protect men and equipment. Tested at 100 percent overload. All load-holding parts are special alloy steel. This hoist actually has a five-to-one safety factor.

Economical

Service it yourself. The Challenger may be completely disassembled in minutes with simple tools. No lost travel time to and from the factory for repairs.

Find out more about the all-new Coffing Challenger, available in ½- and 1-ton capacities. Write for Bulletin P9C.

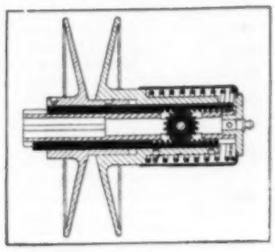
COFFING HOIST COMPANY
Danville, Illinois

QUIK-LIFT ELECTRIC HOISTS • HOIST-ALLS • RATCHET LEVER HOISTS • MIGHTY-MIDGET PULLERS • DIFFERENTIAL CHAIN HOISTS • LOAD BINDERS • I-BEAM TROLLEYS

BREVITY—Identify by IEN - 8737 if you write the maker

DRIVE . . Adjustable pitch sheave rates to 15 hp., 3 to 1 ratio range

Source: GERBING MFG. CORP.
11803 Milwaukee Ave., Northbrook, Ill.



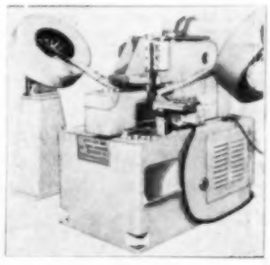
New size rating of 15 hp. at 1,750 rpm., with the belt running at maximum pitch diameter, has been added to the company's smaller unit previously described IEN-8406-50. Design is the same as in the original unit in which the two flanges are secured to sliding keys carrying rack teeth that engage a central pinion. Movement toward or away from center is equal on the two sides so the belt will remain on center at any pitch adjustment. A pressure spring determines the power rating.

The sheave measures 13 in. in flange diameter by 5⅝ in. over the flanges in maximum width adjustment. Overall length of the assembly is about 12½ inches. Diameter of the hub end is 4½ inches. Maximum pitch diameter is 12.313 in. with minimum diameter at 4.104 inches. Two stock bores for motor mounting are 1¼ and 1⅝ inches. Weight is 50 pounds. The sheave takes a standard variable-speed rubber V-belt measuring 2¾ in. in greatest width by 11/16 in. in thickness. No. 1300-150 is the designation.

BREVITY—Identify by IEN - 8738 if you write the maker

LATHE . . Automatic forming machine with cam controlled feed and operation

Source: MOTCH & MERRYWEATHER MACHINERY CO.
715 Penton Bldg., Cleveland 13, Ohio



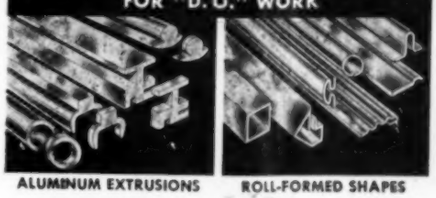
Cylindrical work, a laminated silicon-steel rotor for small motors, feeds from hoppers at the sides of this new machine to the cam-operated feed slides for the two machine spindles. The set-up is a further development of the company's hollow-spindle automatic lathe, previously described IEN-6692-50.

The cam locates a loading mandrel in the center hole of the work piece and then forces the piece against hardened drive spurs mounted on the face of each spindle. At the same time the magazine slide retracts for reloading. When the work is in operating position and rotating the tool slide advances rapidly, slows to feed position, moves horizontally across the diameter of the work, then is withdrawn rapidly to dwell position where a second tool chamfers the trailing edge of the piece. Immediately after this operation the cam-actuated loading mandrel is withdrawn from the finished work piece alowing it to fall into a take-off chute which conveys it by gravity to a tote box. Production is at 800 pieces per hour.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8739 if you write the maker

PROMPT DELIVERY!
FOR "D.O." WORK



ALUMINUM EXTRUSIONS ROLL-FORMED SHAPES

Let Werner light metal shapes help you meet "D.O." deadlines.

You can get prompt delivery of "custom" shapes in extruded aluminum, as well as roll-formed aluminum, stainless steel, brass, zinc and copper. Shapes are manufactured to close tolerances, to your exact specifications. Quality is assured by Werner's extensive manufacturing and engineering experience, plus full production facilities, including tool-and-die-making equipment.

For an estimate, send drawing and specifications, plus data on quantity, finish, length, etc. Werner can perform the following secondary operations—bending, drilling, punching, cutting, counter sinking and welding. Finishes—as extruded, polished or anodized.

FREE bulletins describing manufacturing facilities and telling when to choose extruded or rolled shapes. Write: Dept. IEN.

R. D. WERNER CO., Inc.
295 FIFTH AVE., N. Y. 16, N. Y. • PHONE MU 6-2395
MANUFACTURERS OF ALUMINUM EXTRUSIONS AND ROLL-FORMED SHAPES

BREVITY—Identify by IEN - 8740 if you write the maker

For High Production on Small Parts

LOW COST . . . AIR OPERATED

Han-D-Press

designed to meet high production schedules on

- ASSEMBLING
- STAKING
- RIVETING
- PUNCHING
- MARKING
- PRESSING

Bulletin No. 251 sent on request. Gives full description with engineering data.

Replace old hand-operated arbor presses with Hannifin's versatile "Han-D-Press"! Handle light production operations . . . faster . . . and at lower cost! Electric control. Hand or foot operated. Two popular sizes—½ ton and 1 ton.

HANNIFIN

Hannifin Corporation • 1107 S. Kilbourn Ave., Chicago 24, Ill.

BREVITY—Identify by IEN - 8741 if you write the maker

IDEAL "Hand-Type" CLEANER

SUPER POWER • VALUE PERFORMANCE

1-1/3 HP motor—Weighs only 14½ lbs. Also 1/2 and 2/3 HP models.

BLOWS concentrated blast of dry air at 300 miles per hour. Blows grit, dust and lint from hard-to-get-at places. Evaporates moisture.

VACUUMS dirt, metal, lint and wood particles, bench litter, etc.

SPRAYS paint, varnish, lacquer, insecticides and deodorants.

Does a Better Job—on Any Job!

TRY IT Free!

SOLD THROUGH AMERICA'S LEADING DISTRIBUTORS

IDEAL INDUSTRIES, Inc.
1308 Park Avenue, Sycamore, Illinois

Give us FREE DEMONSTRATION of the IDEAL "Hand-Type" Cleaner in our plant.

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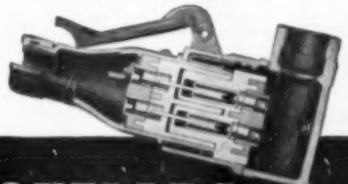
Company _____
Address _____
City _____ Zone ____ State _____

BREVITY—Identify by IEN - 8742 if you write the maker



QUELARC The Circuit-Breaking Plugs and Receptacles . . . Ratings up to 200 AMPERES

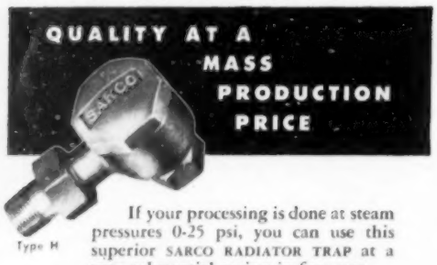
The exclusive QuelArc construction provides exceptional protection to contacts, for safe use as current rupturing devices. Unique partitioned insulation provides extra long distance between contacts and between contacts and ground. Insulating chambers completely enclose all contacts and form an arc-trapping space. Galvanized cast metal housings, bakelite insulation and individually renewable contacts insure long service life.

QuelArc plugs and receptacles are available in a complete range of styles, 2, 3 and 4 pole types—grounded through shell or extra pole. Housings with threaded cap, plain cap or hinged spring door. Ratings 20, 30, 60, 100 and 200 amperes, 250 volts DC, 600 volts AC. Consult your Pylet Catalog 1100, Bul. 1140-2 for complete listings.

CONDUIT FITTINGS • FLOODLIGHTS

THE PYLE-NATIONAL COMPANY
1348 North Kostner Avenue • Chicago 51, Illinois

BREVITY—Identify by IEN - 8743 if you write the maker



Type H

If your processing is done at steam pressures 0-25 psi, you can use this superior SARCO RADIATOR TRAP at a very substantial saving in first cost.

Many thousands are used every year for space heating in all types of buildings. They are produced by the latest automatic machinery, resulting in highest quality at a very low price.

SARCO thermostatic steam traps are unequalled for the rapid removal of air and condensate from steam coils or jackets, and their supply lines.

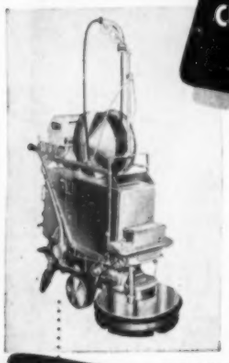
0-25 PSI—Type H, Bulletin 155
0-65 PSI—Type S-65 } Bulletin
0-100 PSI—Type N-100 } 195

SARCO COMPANY, INC.
EMPIRE STATE BUILDING, NEW YORK 1, N. Y.
Represented in Principal Cities
SARCO CANADA LTD., TORONTO 5, ONTARIO

510

BREVITY—Identify by IEN - 8744 if you write the maker

NEW Self-Propelled SCRUBBER-VAC.... .... CUTS CLEANING TIME 2/3!



For
Small-Area Factories (2,000 to 15,000 sq. ft. of floor)
The *new 418P Finnell Scrubber-Vac* cleans floors in *approximately one-third the time* required with a conventional 15 or 18" scrubber-polisher. And the *new 418P* also handles the dry work — polishing, steel-wooling, etc. Has 18" brush ring. Vacuum performs *quietly*. The machine can be leased or purchased.

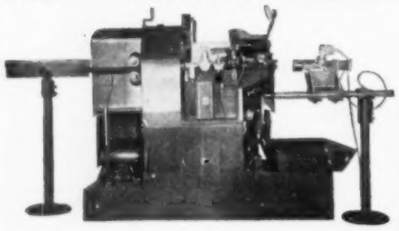
Applies cleanser, scrubs, rinses, and picks up in ONE operation!

FIND OUT WHAT YOU WOULD SAVE... with a *Finnell Scrubber-Vac*. Finnell makes several models and sizes. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2609 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC.
Pioneers and Specialists in FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES
BRANCHES IN ALL PRINCIPAL CITIES

BREVITY—Identify by IEN - 8745 if you write the maker

MODERN CUTTING-OFF MACHINE



Cuts off longer pieces than regular automatic machine — *any length you want*. FAST cutting and chamfering of tubing, pipe, shafting. Check the following figures:

½" Tubing	1¼" Cold Rolled	1" Tubing
Cuts and Chamfers both outside edges of ½".030 wall tubing. 5" lengths, every 2.5 seconds.	Cuts and Chamfers both ends. 20" long, at rate of 1 every 20 seconds.	Cuts and Chamfers both outside edges, pieces 3" long. One every 3 seconds.

4" THREADED STUDS

Modern Automatic Cutting-Off Machines available in 2 sizes, handling work up to 3" O.D.

Cut and chamfered at one time—in 8 sec.—from 10 ft. length of stock already threaded (¾" U. S. Standard.) Clean cut. Clean chamfer. Nuts start easily, with no extra finishing required.

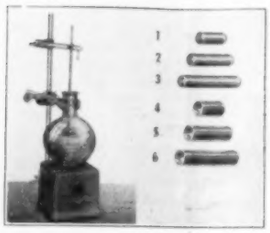
WRITE for CATALOG

MODERN MACHINE TOOL CO.
JACKSON MICHIGAN

BREVITY—Identify by IEN - 8746 if you write the maker

MIXING . . Laboratory unit rotates magnets in liquid container

Source: LABORATORY INDUSTRIES INC.
4708-12 W. North Ave., Chicago 39, Ill.



Magne-Stir is a new assembly of aluminum housing and motor-driven mechanism that sets up a rotating field beneath a non-magnetic flask or container in which liquids are to be stirred. Teflon-covered magnetic stirring bars of various sizes and length are supplied with the unit to be immersed in the liquid inside the container. When the motor is started the rotating field causes the magnet to rotate in the liquid and set up the stirring action. Magnetic bars coated with Pyrex glass can be specified in place of the Teflon-covered units. Speed is varied by turning a pointer in connection with a dial on the housing.

BREVITY—Identify by IEN - 8747 if you write the maker

CLEANING . . Liquid solvent to clean metal products in process

Source: DU-LITE CHEMICAL CORP.
46 River Road, Middletown, Conn.

5 gal. containers and 55 gal. drums

Dynakleen is a new liquid solvent for application by hand or in spray washing machines at room temperature on metal products in process. It will remove buffing and drawing compounds from knurled or fluted surfaces and will clear the surfaces of grease, oil, discoloration within a minute of the time it has been applied. It can be used repeatedly, with occasional filtration, and is particularly suited to prepare metal surfaces prior to Bonderizing, galvanizing, painting, Parkerizing, plating as a finish treatment.

BREVITY—Identify by IEN - 8748 if you write the maker

GAGE . . Flexible manometer made of vinyl plastic for field use

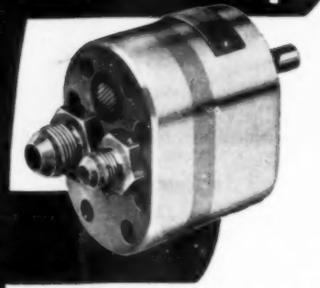
Source: F. W. DWYER MFG. CO.
307 S. Western Ave., Chicago 12, Ill.

U-tube and plastic scale making up this new manometer can be rolled up for carrying in a case or pocket. Both straighten out to operating position, will not kink. The scale is held between the two legs of the tube by weaving it through the central bracing section. Caps cover the tube ends to prevent loss of liquid when the unit is not being used.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8749 if you write the maker

Hydraulic Pumps



HYDRAULIC PUMPS — precision-made pumps for highest volumetric efficiency. Volumes from .05 to 10 gpm against pressures to 2000 psi.
FLUID MOTORS develop to 6 H.P. Low starting torque, compact design.
For EASTERN'S HYDRAULIC PUMP CATALOG
Write to: DEPT. HC

by *Eastern* INDUSTRIES INC.
296 Elm Street
New Haven, Conn.

BREVITY—Identify by IEN - 8750 if you write the maker

Spend Weighing Equipment Dollars Wisely . . .

The facts are that practically everything made uses scales. Such operations as ingredient compounding, production line check-weighing, laboratory work, blending, testing, selection and classifying are but a few uses. It's standard practice to checkweigh reciprocating parts such as connecting rods, pistons and wrist pins for uniformity and accuracy. Engineers entrusted with profitable production now generally agree the weighing element is one of the most vital cost control measures at their disposal. This is why weighing equipment dollars should be spent wisely. Few individual equipment requirements do more to improve uniformity and quality than the right weighing units in the right place, and no weighing equipment is better than EXACT WEIGHT Scales. Today these famous industrial scales do more varied jobs, in more plants, in manual, semi-automatic and fully automatic operations than ever before. Their capacity to save time, money, product and labor are thoroughly recognized by men responsible for profitable volume production everywhere. Write for information covering your job.

EXACT WEIGHT SCALE Model No. 273 for counting, testing, production line check-weighing. Features end-tower construction; speed of operation—Capacity 12 lbs.

EXACT WEIGHT SCALES
Industrial Precision
THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

BREVITY—Identify by IEN - 8751 if you write the maker

ADEL for PEAK PERFORMANCE

Industrial Hydraulic Equipment
ADEL Hydraulic Valves and Pumps are setting new and ever higher standards for precision in manufacturing and efficient performance in operation. Following are but a few of the wide variety of models to meet all operating conditions.

GEAR-TYPE HYDRAULIC PUMPS

1000 psi, 1800 rpm, 1.5 to 46.8 gpm.

DIRECTIONAL CONTROL VALVES

4-way, 1500 psi, flows to 28 gpm.

BY-PASS VALVES

Relief, Sequence Unloading, 50-1500 psi.

VOLUME (FLOW) CONTROL VALVES

Compensated type, no drain line, 1500 psi.

PILOT VALVES

With or without dog or lever. 1000 psi.

CHECK VALVES

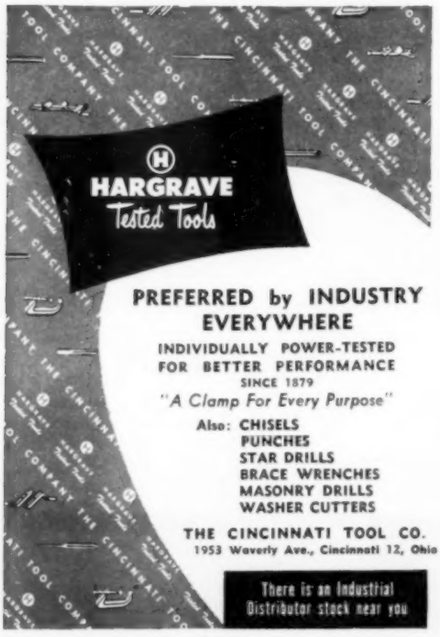
Free flow, one direction only. 3000 psi.

A few select territories are still available to progressive distributors of hydraulic equipment. Inquiries invited.

ADEL *Write for complete engineering specifications and counsel*
DIVISION OF GENERAL METALS CORPORATION
10763 VAN OWEN STREET • BURBANK, CALIFORNIA

DISTRIBUTORS: Air & Hydraulic Engineering Co., New Haven, Conn. • Russ Chamberlin Company, Portland, Oregon • J. Boyd Coates, Philadelphia, Pa. • Frank T. Donnelly Company, Pittsburgh, Pa. • Neskel Engineering & Supply Co., San Francisco, Calif. • Neskel Engineering & Supply Co., Glendale Calif. • Hydraulic Brake Supply Co., Phoenix, Ariz. • Lincoln Supply Co., Providence, R. I. • Scott Equipment and Engineering Company, Dayton, Ohio • H. F. Soderling Co., Seattle, Wash. • Robert Taylor & Sons, Salt Lake City, Utah • Wyatt Sales Co., Cleveland, Ohio • Corby Supply Company, St. Louis, Mo. • Industrial Air & Hydraulic Equipment Co., Detroit, Mich.

BREVITY—Identify by IEN - 8752 if you write the maker



PREFERRED by INDUSTRY EVERYWHERE

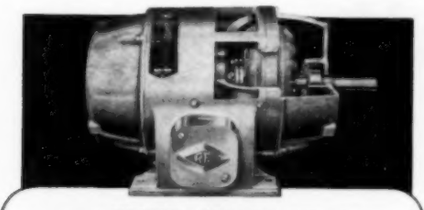
INDIVIDUALLY POWER-TESTED FOR BETTER PERFORMANCE
SINCE 1879
"A Clamp For Every Purpose"

Also: CHISELS
PUNCHES
STAR DRILLS
BRACE WRENCHES
MASONRY DRILLS
WASHER CUTTERS

THE CINCINNATI TOOL CO.
1953 Waverly Ave., Cincinnati 12, Ohio

There is an Industrial Distributor stock near you

BREVITY—Identify by IEN - 8753 if you write the maker



NEW *FLUID-SHAFT* MOTOR GIVES SMOOTH LOAD ACCELERATION ...ELIMINATES NEED FOR CLUTCHES!

Reuland Fluid-Shaft motor with double reduction gear reducer.

REULAND FLUID-SHAFT ELECTRIC MOTORS are the only units with an *integral fluid coupling*. Their cost is much less than a conventional motor with drive attachment, and their ability to "take it" has already been proved on heavy jobs, including mixers, centrifugals and cranes.

Fluid-Shaft motors accelerate heavy loads smoothly without the aid of mechanical clutches. Overloads are eliminated. *Will start heavier loads than regular motors of comparable horsepower!*

Write for new Engineering Folder No. 1000.

- Protection against "jamming"
- Reduces maintenance
- No need to overmotor to start heavy loads
- Wide H. P. range
- Uses less starting current
- Shorter mounting dimensions

REULAND ELECTRIC CO.
ALHAMBRA, CALIFORNIA • DISTRIBUTORS IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 8754 if you write the maker

Preferred power on portable paint-sprayers — one of many hundreds of applications on machines, tools, appliances for industry, construction, railroads, oil-fields, and on equipment and appliances for farm and home.

THE sure way to get the best in air-cooled power – insist on Briggs & Stratton, the recognized leader. No other single-cylinder, 4-cycle, air-cooled engines are so universally preferred by manufacturers, dealers and users alike.

Briggs & Stratton Corporation,
Milwaukee 1, Wis., U. S. A.

In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.

BREVITY—Identify by IEN - 8756 if you write the maker

BORING . . Adjustable head, two sizes take ½ and 1¼ in. bars

Source: LAST WORD SALES CO.
18502 Mt. Elliott, Detroit 34, Mich.

The company announces its start in production on the Samson boring head and availability of this head in two sizes. The smallest takes a ½-in. tool shank, seats it to 2 in. in depth and provides radial adjustment through ¾ in. in 0.001-in. divisions on the adjusting dial. Overall length without a shank is 2⅝ inches. Outside diameter is also 2⅝ inches. The head is made normally with a 1¼-in. straight shank, with a No. 2, 3, or 4 Morse taper shank or with a threaded end as shown.

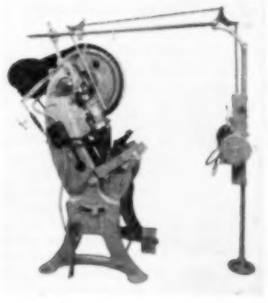
The larger of the two units takes a tool shank 1¼ in. in diameter to a depth of 3⅛ in. and provides ⅝ in. of radial adjustment. Overall length without the shank is 5 inches. It is in stock in seven arrangements of threaded end or taper shank, the latter ranging through No. 4, 5 and 6 Morse taper including No. 50 for a standard milling machine spindle.

The side adjustment is mounted in dovetailed ways. All parts are machined from solid stock with ground finish.

BREVITY—Identify by IEN - 8757 if you write the maker

PROTECTING . . Pull back press guard keeps operator's hands out of danger

Source: ALL AMERICAN SAFETY EQUIPMENT CO.
9-13 S. La Salle St., Room 1139, Chicago 3, Ill.



New design of the company's Sentinal guard replaces cables previously used between the press and the actual pull-back action behind the operator with connecting rods and bell cranks. The arrangement provides a solid connection from the press to the point where the cables now apply so there is no slack and practically nothing that can wear out.

The cables that extend from the guard forward to wrist bands for the operator's two hands are made of plastic-coated steel wire in light-weight flexible design. These cables can be adjusted independently for as much or as little pull-back action as may be required for a given job. A guard assembles on a tubular stand equipped with a floor plate and with a bracket and tube for connection to the assembly.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8758 if you write the maker

A Journeyman's Tool, built to stand up under constant, on-the-job Contractor or industrial use . . .

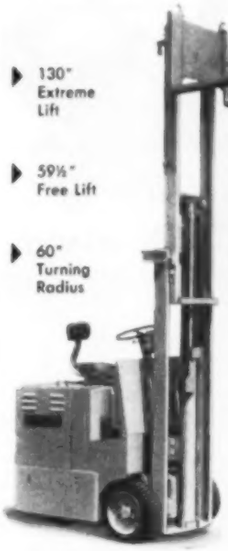
- **NO STARTING HOLE NEEDED** . . . Simply place guide next to material and "rock" tool into an upright position.
- **CUTS RIGHT THRU IMBEDDED NAILS** . . . wood, plaster, iron pipe, sheet metal, "Transite" and most other materials —even in cramped quarters.
- **FITS HEAVY DUTY ¼" or ⅜" DRILL** . . . as easy as changing bits! Overall length only 10¾"; weight only 3 lbs. 6 ozs.
- **BUILT FOR CONSTANT DUTY OPERATION** . . Built-in blower keeps Super-Saw cool even when used continuously and blows sawdust away from cutting line. Replaceable "Oilite", phosphor bronze and high speed ball bearings throughout. Write for Bulletin r19.

Cutting opening in oak flooring in less than 3 minutes — no starting hole needed!

Listed on Federal Supply Schedules. Class 40 Material.

R.C.S. TOOL SALES CORPORATION
JOLIET, ILLINOIS, U.S.A.

BREVITY—Identify by IEN - 8759 if you write the maker



- 130" Extreme Lift
- 59½" Free Lift
- 60" Turning Radius

Mercury JEEP
MODEL 230
2000 Lb. Capacity
Tilting — Tiering

The most versatile fork truck of 2000 lb. rating. 130" lift with ample stability...60" turning radius *plus* inclined automotive steering...foot pedal acceleration . . . convenient controls and many other design advancements. For complete details request Bulletin 295.

MERCURY MANUFACTURING COMPANY
4132 S. Halsted Street • Chicago 9, Illinois

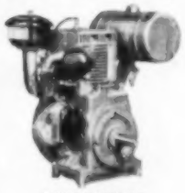
BREVITY—Identify by IEN - 8760 if you write the maker

SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

BREVITY—Identify by IEN - 8761 if you write the maker

The POWER ADVANTAGE Story of the Model AEN Single-Cylinder WISCONSIN *Air-Cooled* ENGINE



Here's more power...less weight...lower cost . . . all with no sacrifice in heavy-duty construction and serviceability in this Model AEN single-cylinder Wisconsin Engine. Features include:

1. Dependable air-cooling under all climatic and weather conditions.
2. Self-cleaning tapered roller bearings at both ends of the crankshaft withstand either side-pull or end-thrust without danger to bearings.
3. Rotary type high tension OUTSIDE Magneto with Impulse Coupling operates as an entirely independent unit that can be serviced or replaced in a few minutes.
4. Maximum torque at usable speeds for equipment that really has to go to work.

Our engineering department will gladly cooperate with you in adapting Wisconsin Engines to your requirements. Write for detailed data and name of the nearest Wisconsin distributor.

CONDENSED SPECIFICATIONS

Bore	3"
Stroke	3⅛"
Piston Displacement	23 cu. in.

HORSEPOWER

5.1 H.P. at 1800 R.P.M.
6.4 H.P. at 2200 R.P.M.
7.2 H.P. at 2600 R.P.M.
7.5 H.P. at 3000 R.P.M.

No. of Piston Rings	4
Fuel Tank Capacity	1.7 Gals
Standard Engine Weight, Net	110 lbs.
Crated	135 lbs.

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy Duty Air Cooled Engines
MILWAUKEE 46, WISCONSIN

BREVITY—Identify by IEN - 8762 if you write the maker

$135 turns your lathe into a PRECISION grinder*

At a fraction of what you'd expect to pay, you add a precision grinder to your shop. You pay less because you buy only the grinder "head" . . . your lathe supplies the rest.

Fast set-up—usually just a few minutes—means repeated savings on tool room, maintenance, and production jobs. "Big grinder" accuracy holds tolerances to .0001".

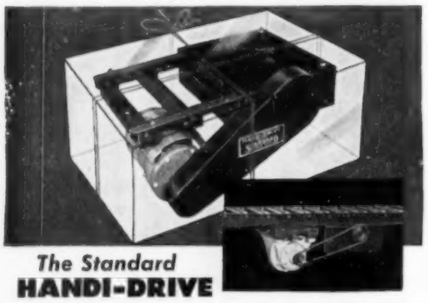
Besides handling internal and external cylindrical work from a lathe mount, your Dumore becomes an efficient surface grinder when mounted on a miller, shaper, or planer. Write for bulletin or shop demonstration.

DG-9A *"For lathes 9 to 13" swing. Other grinders $44.50 to $395 for lathes of 6 to 20" swing and up.*

The DUMORE Company
1300 17th St., RACINE, WISCONSIN
Export address: 13 E. 40th St., New York, N.Y., U.S.A.

BREVITY—Identify by IEN - 8763 if you write the maker

"Power-Package" Unit for Roller and Belt Conveyors



The Standard HANDI-DRIVE

THIS self-contained drive unit provides tractive power for any gravity conveyor—belt or roller. Converts present conveyors to live roller or belt — quickly at low cost.

HANDI-DRIVE Bulletin No. IEN-91 gives complete information — how to apply to present conveyors or plan new system with standardized units — straight, curves, or inclines. Write for copy today.

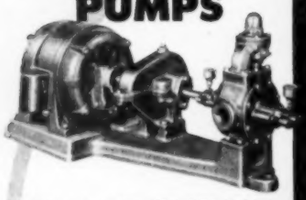
STANDARD CONVEYOR COMPANY, NORTH ST. PAUL 9, MINN.

SEND FOR HANDI-DRIVE BULLETIN.

Standard GRAVITY & POWER CONVEYORS

BREVITY—Identify by IEN - 8764 if you write the maker

If it's performance you're after . . . . ✓BLACKMER PUMPS



Bulletin 307, "FACTS," Lists Data Vital To Process Plant Pump Engineers

"FACTS" contains design and construction, maintenance, operation and application data for better pump service.

WRITE FOR YOUR COPY

WHEREVER THESE OR SIMILAR LIQUIDS ARE HANDLED

Acids
Alcohols
Asphalt
Beer
Butane
Dyes
Fuel Oil
Gasoline
Glue
Mash
Molasses
Oils
Paints
Rosin
Soaps
Soups
Syrups
Tallow
Tar
Tomatoes
Yeast

BLACKMER PUMP CO.
GRAND RAPIDS, MICHIGAN

NEWS NOTES

Reviews and announcements to keep you informed on sources of special assistance for your daily problems. Subjects include unusually helpful manufacturers' literature, textbooks of industrial interest, slide films and motion pictures on training or product description, unusual applications of existing equipment, formation of new service organizations, new processes, expositions, conventions. Copies of printed material and films are available. Any limiting conditions are named.

BREVITY—Identify by IEN - 8766 if you write the maker

CALCULATING . . Booklet on electronic computer shows mathematical equations and corresponding circuits

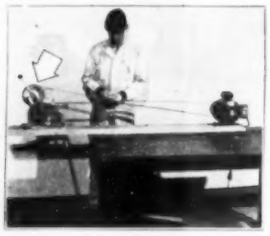
Geo. A. Philbrick Researches Inc.
228-32 Congress St., Boston 10, Mass.

Block diagrams accompany the mathematical equations for each of the analog computer components described in new 36-page "GAP/R Catalog". Adding, integrating, unit-lag, squaring, multiplying, function generator components are examples. A section at the rear shows how schematic circuit block diagrams can be set up for a given mathematical function, together with a table of operators and responses.

BREVITY—Identify by IEN - 8767 if you write the maker

GRINDING . . Backstand for internal surface work for you to make from plans the company will supply

Behr-Manning Co.
P. O. Box 808-A, Troy, N. Y.



The arrow in the illustration indicates new "Belt Strapping Unit" backstand which the company has developed for coated-abrasive belt grinding and polishing of internal work such as scissor eyes, forged hardware, surgical instruments. It is intended to minimize time required to insert the belt end through the opening of the part to be finished or to remove the belt when completed. A foot treadle releases belt tension, the belt slips at the drive pulley unit, leaving the belt slack so the operator can slip it off the backstand pulley. The company will send you instructions on how to make the unit.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8768 if you write the maker

SAVE FINISHING TIME

LAPPING STICKS AND WHEELS
HAND FINISHING STONES
ON MOLDS AND DIES
Specify
ELGIN DYMO
DIAMOND COMPOUND
. . . repeat results certain with Elgin graded diamond!
AND FINISHING ACCESSORIES
. . . available from stock!
WRITE FOR FREE DEMONSTRATION!
FELT BOBS AND WHEELS
BRISTLE BRUSHES
ABRASIVES DIVISION
ELGIN NATIONAL WATCH COMPANY
Elgin, Illinois

BREVITY—Identify by IEN - 8769 if you write the maker

Checkerette

Thick "knock-down" wardrobe rack answers almost any "wraps" problem, because it can be set up anywhere in a few minutes without nuts, bolts or tools . . . can be disassembled and stored in small space when not in use. It is ideal for installation near point of work, occupies only 1' x 4' floorspace; is ideal for company cafeterias, offices, laboratories and meeting rooms.

It will hold wraps by day and shop coats at night and keep both aired and dry.

Modern, efficient designs, welded steel construction, rigid in use (all members held under tension).

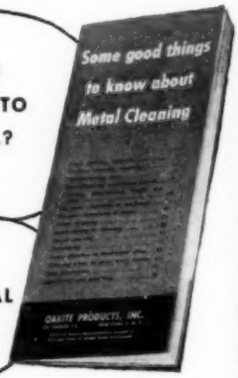
Write for Circular CT 05

VOGEL - PETERSON CO.
624 So. Michigan Ave., Chicago 5, Ill.

BREVITY—Identify by IEN - 8770 if you write the maker

WHAT'S THE FASTEST WAY TO CLEAN METAL? See page 11

WHAT'S THE MOST ECONOMICAL WAY? See page 9



Oakite's New FREE Booklet "Some good things to know about Metal Cleaning"

answers many questions that mean better production for you, more money in your pocket. You'll want to read more about:

Can one cleaning material do all metal-cleaning jobs? *See page 5.*

What kind of cleaner attracts both oil and water? How does this help remove buffing compound residues and pigmented drawing compounds? *See page 8.*

What are the advantages of reverse current for electrocleaning steel? *See page 15.*

Can you electroclean brass without tarnishing? *See page 18.*

Can you clean steel and condition it for painting for less than 20 cents per 1,000 square feet? *See page 26.*

Would you like a cleaner that removes rust and oil in one operation, often eliminating all need for pickling? *See page 28.*

Does your burnishing produce a luster you are proud of? *See page 32.*

FREE For a copy of this 44-page illustrated booklet, write Oakite Products, Inc., 16A Thames St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE
Technical Service Representatives in Principal Cities of U. S. & Canada

BREVITY—Identify by IEN - 8772 if you write the maker

Tape triples life of work gloves!

In the picture above, *Polyken* tape No. 133 is being used to triple the working life of a work glove! Mather Spring Company used to mend its 15,000 pairs of workers' gloves by hand sewing. Now *Polyken* No. 133 does the job faster, easier, better! Sticks to any surface as well as its own. Resists abrasion, solvents, and moisture. Ask your *Polyken* distributor or write for free folder, "Tape is a Tool." Address *Polyken*, Dept. IEJ, 222 W. Adams St., Chicago 6.

ONE OF THE NEW...
Polyken® INDUSTRIAL TAPES
TAILORED TO YOUR JOB
POLYKEN Industrial Tape, Department of Bauer & Black, Division of The Kendall Company

BREVITY—Identify by IEN - 8773 if you write the maker

ACCEPTED by — expedite production inspection and assembly

REJECTED by — with Kum-Kleen self-adhesive informative labels

RE-WORK by — they're peelable they're permanent they stick to any clean surface

new, removable Kum-Kleen inspection stickers

Hundreds of industrial plants have found these Kum-Kleen *Removable* Inspection Stickers are far faster, safer and more efficient than string tags, chalk marks, grease pencil, or gummed labels. These pressure-sensitive Kum-Kleen stickers are quickly applied *without moistening*, and they stick-and-stay-stuck to all clean, smooth surfaces, never curl or pop off, yet easily peel off when their job is done. In stock for immediate delivery or available printed to your specifications.

WRITE FOR SAMPLES
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AVERY ADHESIVE LABEL CORPORATION — Kum-Kleen

NEW YORK CITY: 41 Park Row
DETROIT: 3049 East Grand Boulevard
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CHICAGO: 608 South Dearborn Street
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Representatives In All Principal Cities

BREVITY—Identify by IEN - 8774 if you write the maker

"PAID FOR ITSELF ON ONE JOB!"

Foredom FLEXIBLE SHAFT MACHINES have many time-saving applications but users often find a Foredom REPAYS ITS COST on ONE JOB through eliminating an expensive disassembly and re-set job on such tasks as removing high spots on gears and touching up tools or cutters in a production set-up. The secret's in Foredom's extra small handpieces which handle like a pencil and penetrate into spots inaccessible for other tools.

Indispensable for "SMALL WORK" GRINDING AND FINISHING JOBS

Foredoms are profitable additions to ALL 3 departments—Production, Tooling and Maintenance. 5 HANDPIECE TYPES (all instantly interchangeable) produce versatility to a marked degree.

SPOT THEM LIBERALLY ABOUT THE PLANT for emergency and every-day use. Their cost is negligible. Prices start at $17.75.

Quality Tested Since 1922

SEE YOUR INDUSTRIAL SUPPLY DISTRIBUTOR. IF HE CANNOT SUPPLY YOU WRITE TO US. MAIL COUPON FOR CATALOG.

FOREDOM ELECTRIC CO., Dept. N-4146
27 Park Place, New York 7, N. Y.
Send your catalog No. N-4146 showing different uses of Foredom Flexible Shaft Machines. Name ..... Address ..... City & Zone ..... State .....

NEWS NOTES—Continued

"How to light drafting rooms"

BREVITY—Identify by IEN - 8775 if you write the maker

CALCULATING . . Nomograph charts on illumination to predict daylight brightness distribution in a room

Pittsburgh Corning Corp.
634 Duquesne Way, Pittsburgh 22, Pa.

Brightness of a room before it is built can be predicted by means of new "PC Daylighting Nomograph" charts which the company offers on request. The prediction will give amount of daylight present at any point in a room at any time of day and any day of the year. Architect's plans and local weather-bureau records can supply the needed data.

BREVITY—Identify by IEN - 8776 if you write the maker

COMMUNICATING . . Sound motion picture to instruct operator of a private telephone switchboard

Wilding Picture Productions Inc.
1343-47 Argyle St., Chicago 40, Ill.

"The Invisible Receptionist" titles new 20-min. sound film in which an operator of a private telephone switchboard describes how to greet callers and handle traffic. This operator also describes how not to do the job by recalling mistakes and previous experiences. You can secure information on the new film direct or through your local Bell Telephone Office.

BREVITY—Identify by IEN - 8777 if you write the maker

ELECTRIC POWER . . Catalog of sound films on electrical power, products and their application

Westinghouse Electric Corp.
511 Wood St., Dept. IEN, Room 1110, Pittsburgh 30, Pa.

Seventy-two sound films are reviewed in new 76-page Catalog B-4761. All of them are available on loan from the company. They cover a variety of topics under three groupings: general interest, product information, training films and instruction courses. Each is reviewed briefly, typical views illustrated, potential audience noted, details given.

BREVITY—Identify by IEN - 8778 if you write the maker

LIGHTING . . For drafting rooms the subject of new useful information booklet

General Electric Co.
1 Nela Park, Cleveland 12, Ohio

R. L. Oetting is author of new 8-page "Lighting Guide to Better Drafting" which is written in the form of a technical article. It covers such topics how much light, shadows, reflections, horizontal or vertical boards, types of lighting for drafting rooms, lighting for activities associated with drafting.

BREVITY—Identify by IEN - 8779 if you write the maker

MANAGEMENT . . Reprint leaflet describes fundamentals of buying stocks and bonds

Merrill Lynch, Pierce, Fenner & Beane
70 Pine St., New York 5, N. Y.

Advertisement originally published some time ago in several large metropolitan newspapers has been reprinted as a 4-page folder for employee distribution. Title is "What Everybody Ought to Know about This Stock and Bond Business". Company officials can request any number of free copies.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8780 if you write the maker

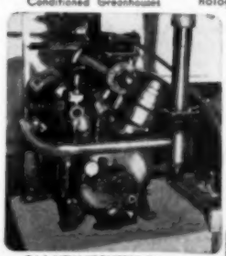
Dr. Fritz Went at Control Board of the Plant Laboratory

Inside One of the Six Air Conditioned Greenhouses

$407,000 Phytotron Laboratory Equipped with Frick Refrigeration

The great new plant research laboratory of the California Institute of Technology, of Pasadena, uses two Frick refrigerating machines for cooling four rooms and air conditioning 13 others, plus six greenhouses. Simulated weather conditions are automatically controlled with ease and accuracy. Installation by the Independent Refrigeration Co., Los Angeles.

Let us quote on the cooling equipment you need—whether for air conditioning, ice-making or other refrigeration work.



Frick NEW "ECLIPSE" Compressor at the Phytotron

FRICK CO. WAYNESBORO, PENNA.
Also Builders of Power Farming and Sawmill Machinery

BREVITY—Identify by IEN - 8781 if you write the maker

STEVENS HORIZONTAL PLATING BARRELS

Stevens Barrels are made of the strongest possible combination of materials and are designed and engineered to give long, rugged service under even the most severe operating conditions. They offer high operating efficiency and exceptionally low maintenance costs.

Ask your Stevens representative about Stevens Plating Barrels for either acid or cyanide processes or write direct for full information to *Frederic B. Stevens, Inc., Detroit 16, Michigan.*

BREVITY—Identify by IEN - 8782 if you write the maker

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

BREVITY—Identify by IEN - 8783 if you write the maker

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MAY GIVE YOU NEW IDEAS

Synthane plastic laminates are about half the weight of aluminum . . . and that is only one of many advantages they may have for you. Synthane is strong, hard, dense, resistant to corrosion, abrasion, impact fatigue and wear. It is easily machined on standard production equipment and has excellent electrical properties such as high dielectric strength and low dielectric constant. If you have a materials problem the answer may be Synthane. For more information clip and mail the handy coupon today.

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FABRICATED PARTS
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MOLDED-LAMINATED
MOLDED-MACERATED

SYNTHANE CORPORATION
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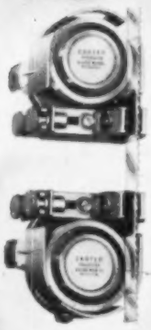
Please send me a copy of the complete Synthane catalog.
Name ..... Firm ..... Address ..... City ..... State .....

BREVITY—Identify by IEN - 8784 if you write the maker

Carter

CUTS COSTS WAY DOWN!



CARTER MICRO-PRECISION GUIDE

Now! Carter introduces its new line of ball-bearing and Oilite Precision Guides for all sized bandsaws. Carter products universally accepted as standard equipment by leading bandsaw manufacturers.

MODEL	LARGE	MED.	SMALL
BALL BEARING WHEEL	$15.00	$13.50	$12.00
OILITE WHEEL	$10.00	$ 8.50	$ 7.00
SAWS	⅛"-1¾"	⅛"-1¼"	⅛"-¾"

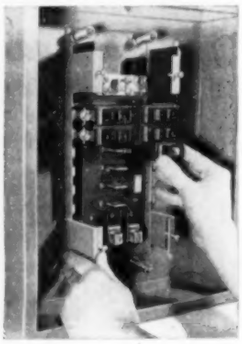
PRICES SUBJECT TO CHANGE

Write For free illustrated folder!

CARTER PRODUCTS COMPANY INC.

57 Mount Vernon, N. W. • Grand Rapids 4, Mich.

BREVITY—Identify by IEN - 8785 if you write the maker



NEW CLASS I PANELBOARD IS FIRST WITH PLUG-IN BREAKER

Trumbull's new line of NLTQ Panelboards introduces the first *plug-in* circuit breaker with quick-make, quick-break. Also: thermal-magnetic protected, physically interchangeable breakers.

OTHER NEW FEATURES

Interior – spring-mounted, self-aligning.
Molded-in-plastisol busbar and stab assembly.
Sequence phasing – in all sizes

Write for Bulletin TEB-14

TRUMBULL ELECTRIC

DEPARTMENT OF GENERAL ELECTRIC COMPANY
Plainville, Conn.

BREVITY—Identify by IEN - 8786 if you write the maker

TAKE THE SHACKLES OFF PRODUCT IMPROVEMENT!

with "Double-Enveloping" Cone-Drive Gears

Double-Enveloping means more teeth IN CONTACT since the worm or pinion is wrapped around the gear (1/10 of all gear teeth are always in contact).

Double-Enveloping means MORE CONTACT PER TOOTH since the gear is wrapped around the worm or pinion (continuous FULL DEPTH area contact).

Double-Enveloping, therefore, means not only increased load capacity for any given center distance, but also an HYDRAULICALLY SMOOTH power flow.

Double-Enveloping gears and reducers are so simple to use, too, as shown in Bulletin #789-50. Ask for a copy.

CONE-DRIVE GEARS
DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS
Division Michigan Tool Company
7171 E. McNichols Road • Detroit 12, Michigan

NEWS NOTES—Continued

"Booklet on how to keep CMP records"

BREVITY—Identify by IEN - 8787 if you write the maker

MANPOWER . . How to feed employees described by article in house publication

Paper Cup & Container Institute Inc.
551 Fifth Ave., New York 17, N. Y.

Major article in April-May issue of "Single Service News" is titled "On-the-Job Feeding." It lists results of a survey on in-plant feeding, vending machines, food-service troubles, management policies. A second article shows paper cups and containers recommended for industrial feeding.

BREVITY—Identify by IEN - 8788 if you write the maker

MASKING . . Useful information booklet reprints series of articles on spray masking methods

Kay & Ess Co.
Kiser & Leo Sts., Dayton 4, Ohio

Four articles from the technical literature have been reprinted in the form of a 68-page booklet with the title, "Modern Masking Materials and Methods for Fabrication and Spray Finishing." Major subjects are properties and uses of tapes, stencils and papers, shields and electroformed masks, liquid masking materials and peelable coatings.

BREVITY—Identify by IEN - 8789 if you write the maker

PRESS TOOLS . . Useful technical data on design and maintenance of carbide blanking dies

Firth Sterling Steel & Carbide Corp.
3111-15 Forbes St., Dept. IEN, Pittsburgh 13, Pa.

Recommendations on grade of "Diecarb" sintered carbide, factors in blanking-die design, types of tooling, holding methods for carbide die inserts, grinding and maintenance, are among the topics in new 16-page Technical Bulletin 70-001.

BREVITY—Identify by IEN - 8790 if you write the maker

RECORD KEEPING . . For Controlled Materials Plan described by text and examples in new Research Report

Remington Rand Inc.
315 Fourth Ave., Room 1618, New York 10, N. Y.

Booklet X-1203 sets up a suggested record-keeping procedure for manufacturers operating under the Controlled Materials Plan. It is based on the company's experience in developing similar procedures during World War II, consists of 25 typewritten pages in a looseleaf binder. It is available upon request.

Topics include materials covered by CMP regulations, analysis of record-keeping requirements and procedure methods for bills of materials, allotment accounting, purchase commitment, production control, delivery scheduling, stock record.

BREVITY—Identify by IEN - 8791 if you write the maker

STAMPINGS . . Examples of product redesign in stampings compared to previous production methods

Leake Stamping Co.
1248-52 E. First St., Monroe, Mich.

Pictures show a variety of metal parts made by stamping along with the same parts produced by other methods in new booklet, "How Modern Stamping Techniques Can Help Conversion." Text describes the design problems involved.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8792 if you write the maker

BREVITY—Identify by IEN - 8793 if you write the maker

Variable Speed Control for Light Machinery

Costs only a trifle — brings amazing results

Converts a constant speed motor to a variable speed drive . . . fits on standard motor shaft. Provides accurate, positive speed changes while the machine is running. With a turn of handwheel, you get exactly the right speed for every job under every changing condition. Sizes from ⅛ to 1½ hp—$7.50 and up. Write for Bulletin IN 66a-J.

Reeves Pulley Company • Columbus, Ind.
REEVES *Variable Speed Control*

BREVITY—Identify by IEN - 8794 if you write the maker

1919 CURTIS 1951
exclusively a manufacturer of
UNIVERSAL JOINTS

Free engineering data sheets and price list upon request.

14 sizes in stock at all times and ready for sample or volume shipments. Stock sizes 3/8" thru 4" O.D.

Write us for information on other than stock sizes up to 6" O.D. and for other than ordinary applications and requirements. As exclusive manufacturer of Universal Joints, we specialize in design collaboration. We invite your inquiry — in detail.

For over a quarter of a century Curtis has pioneered in the manufacture of Universal Joints. Famous patented Curtis "first" include the first ball oiler, internal lubrication grooves, the "tell-tale" lock ring and the lo-friction center block.

Curtis Universal Joints are of top quality. They have to be — consistently so, — for Curtis manufactures nothing else. The fact of the matter is Curtis Standards of Quality were adopted for the Class One Specifications of the Army Air Force in 1941.

CURTIS UNIVERSAL JOINT CO., Inc.
7 Birnie Avenue
SPRINGFIELD 7 MASSACHUSETTS

BREVITY—Identify by IEN - 8796 if you write the maker

AO One Piece ALL PLASTIC GOGGLE

AO's NEW INEXPENSIVE ALL PLASTIC GOGGLE

LIGHTWEIGHT
NON-FOGGING
WELL-VENTILATED
NON-FLAMMABLE
WELL-FITTING

Made of impact resistant plastic, this one-piece goggle (AO479 Clear, AO480 Green) is "optically correct" and meets government specifications. It affords exceptional wide angle vision and can be worn over most standard types of personal glasses and most prescription spectacles and goggles. Recommended for protection against foreign particles striking from any direction on the following types of work: babbitting, chipping, cutting rivets, grinding, hand-tool operations, machine operations, spike driving and similar operations. Your nearest AO Safety Products Representative can supply you.

American Optical SAFETY PRODUCTS DIVISION

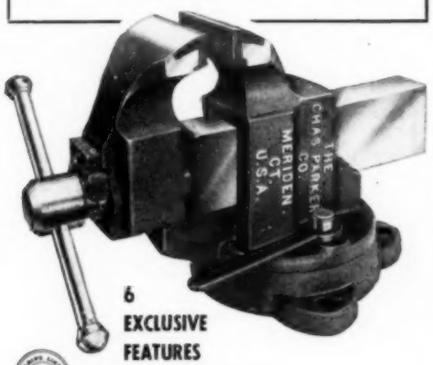
Southbridge, Massachusetts • Branches in Principal Cities

BREVITY—Identify by IEN - 8797 if you write the maker

PARKER VISES

Complete Line Including

HINGED PIPE VISES • WOODWORKERS' VISES



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Sold 100% through distributors

THE CHARLES PARKER CO.
MERIDEN CONNECTICUT

BREVITY—Identify by IEN - 8798 if you write the maker

CERTIFIED SAFE...

Explosion-Proof
TOTALLY-ENCLOSED

US MOTORS

For hazardous locations where open motors are prohibited; also for dirty, dusty, damp settings where ordinary motors are short-lived. With or without Fire Underwriters' label. With or without fan. Insures safest power, longest life. Asbestos-protected windings. Horizontal and vertical types. ½ to 75 h.p. Write for Bulletin No. 1543.

U.S. ELECTRICAL MOTORS Inc.
Box 2058, Los Angeles 54, Cal. or Milford, Conn.

BREVITY—Identify by IEN - 8799 if you write the maker

DRYING . . Refrigerating unit to remove excess moisture from a room

Source: ABBEON SUPPLY CO.
58-12 41st Drive, Woodside, N. Y.

Capacity is about 8,000 cu. ft. of closed space for this new Model DMS-4 refrigerating-type dehumidifier. It plugs into a 110-volt 60-cycle ac. power source. It measures 17 by 13 by 15½ inches, weighs 55 lb. and lists at about $150.

Moisture-laden air is drawn into the housing by a fan and is passed over a refrigerating coil. It condenses the moisture and causes it to collect as drops which fall into a pan. This pan slides out of the housing to be emptied at intervals.

The compresser is a sealed Tecumseh unit. The fan is driven by a Redmond permanently-lubricated motor. The evaporator coil is aluminum. Air delivery rates 110 cfm.

BREVITY—Identify by IEN - 8800 if you write the maker

WOOD TREATING . . Chemical solution acts to improve wood by impregnation

Source: FUNGITROL CHEMICALS INC.
51 Evans Terminal Road, Hillside, N. J.

$3.00 per gallon
in 50 gal. drums

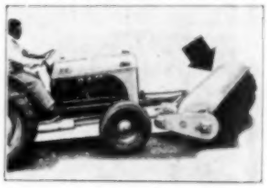
Cellu-san is a new chemical wood preservative and water-repellent liquid to treat wood employed in boxes, baskets, crates, beverage cases, refrigerated spaces, pallets. Application by dipping protects the wood against decay, mold, mildew and assists in maintaining dimensional stability. It is supplied in five-gal. containers and 50-gal. drums. It is diluted prior to use with two parts of mineral spirits. One gallon will treat 250 to 300 board feet on all surfaces.

The concentrate is made of petroleum distillate 50 per cent, wax and resin 35 per cent and zinc-petroleum-sulfonate 15 per cent. If dipping is not practical in any given case, application can be by brush or spray in a flooding wet coat.

BREVITY—Identify by IEN - 8801 if you write the maker

CLEANING . . Cylindrical broom designed for use on a Ford tractor

Source: MEILI-BLUMBERG CORP.
51 Gerlach St., New Holstein, Wis.



Power take-off at one side of this new broom attachment connects to the drive on a Ford tractor. The attachment itself mounts in swivel arrangement at the front of the tractor. It will sweep a 5-ft. path at a 30-deg. angle, depositing accumulated dirt outside of the tractor wheels. Shafts are mounted on ball bearings. A hydraulic cylinder is employed to raise the broom 8 in. from the floor. Fiber or steel bristles can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8802 if you write the maker

we set 'em
so you can forget 'em

DUNHAM RADIATOR TRAPS

Non-clogging • Tight-seating • Free-draining

Once you install a Dunham Trap, it's in to stay. No further adjustment is needed. Each trap is factory set—permanently—for most effective condensate drainage; square, tight seating.

Dunham thermostatic disc, sealed under high vacuum, assures sensitive, positive response to temperature and pressure changes.

Floating valve and rounded, non-clogging seat design assure tight closure with minimum wear. Ball swivel joint between valve and disc prevents localized stresses on disc; prolongs valve and seat life.

For complete information about long-lasting, leak-proof Dunham Traps, WRITE FOR FILE NO. 1501-11.

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C. A. Dunham Co. Ltd., London

HEATING SYSTEMS AND EQUIPMENT

BREVITY—Identify by IEN - 8803 if you write the maker

Wear a DUPOR No. 10 Chemical Cartridge Respirator

Code "A" Cartridges (Soda Lime)—White Plastic for light concentrations of inorganic acid gases.

Code "B" Cartridges (Activated Charcoal)—Black plastic for light concentrations of organic chemical vapors.

Code "AB" Cartridges (Soda Lime and Activated Charcoal)—Yellow plastic for light concentrations of combined inorganic and organic gases.

Unit has DUPOR "controlled-breathing" valves. Double filter apertures hold 50cc. capacity chemical cartridges. Soft rubber face mask gives gas-tight fit on any shape face, as well as panorama view with no blind spots. Chemical filters are packed in colored plastic cartridges that will not corrode like metal ones or crush like paper types. Unit is shipped with code "B" cartridge unless otherwise specified.

Sample sent
$5.00 pp

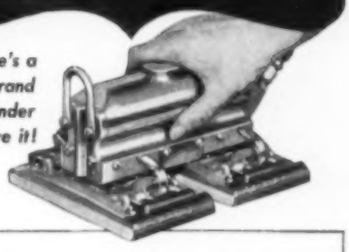
Extra Cartridges 70c a set

H. S. COVER, South Bend, Ind.

BREVITY—Identify by IEN - 8804 if you write the maker

Whatever your sanding problem...in wood, metal, plastic

...there's a Sundstrand Air Sander to solve it!



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- Wood finishing . . . building materials, furniture, cabinets, wood parts, etc.
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SUNDSTRAND

SUNDSTRAND AIR SANDERS

SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

BREVITY—Identify by IEN - 8805 if you write the maker

Only LINK-BELT "RC" FLEXIBLE COUPLING...

gives you single-chain simplicity plus divided rollers

YES, the exclusive design of Link-Belt "RC" Flexible Couplings combines these two desirable features.

The result: equalization of load, proper balance at high speeds . . . adjustment to reasonable misalignment and end float . . . simplicity and economy.

Link-Belt makes a complete line of Roller Chain Couplings from fractional to 1000 hp. You can get all the facts from Folder 2363.

"RC" Couplings available in 50 sizes, ¾ to 12 in. bore.

★ LINK-BELT "RC" FLEXIBLE COUPLINGS

LINK-BELT COMPANY: Chicago 8, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices in principal cities. 12.525

BREVITY—Identify by IEN - 8806 if you write the maker

Next winter, keep heat and heating costs from

"HITTING the CEILING"

Thermolier Unit Heaters are the most economical answer to many tough heating problems. Easy to install and to relocate at any time to meet changes in plant layout or heating requirements. Waste no valuable floor or wall space. Aim heat where you need it. You pay only for heat you use . . . instead of banking heat wastefully up at the ceiling. Heat is turned on and off by throwing a switch, manually or automatically by simple thermostatic controls. Thermoliers have a patented internal cooling leg which permits use of inexpensive, simple thermostatic trap. Write for full descriptive catalog.

Thermolier Unit Heaters

GRINNELL

Grinnell Company, Inc., Providence 1, R. I.
Branch Warehouses in principal cities.

BREVITY—Identify by IEN - 8807 if you write the maker

Machine "down-time" cut 40%

with HYPRESSURE Jenny STEAM CLEANER

Your machines are back in production almost twice as fast, if they are Hypressure JENNY steam cleaned before repairs! Actual time studies show that up to 40% of the costly time of skilled mechanics is lost fighting grease and dirt.

Hypressure JENNY not only saves precious time, but pays plus dividends in stepped-up production, fewer lost-time accidents, lower fire-insurance premiums, and increased personnel efficiency. Write for complete information about this modern aid to increased production. There's no obligation; so why not do it now?

There is a Hypressure Jenny Steam Cleaner for every Mill . . . Mine . . . Factory . . . Farm and Automotive need

Distributors in all parts of the world — For local representative see classified Telephone Directory

HYPRESSURE JENNY DIVISION — HOMESTEAD VALVE MANUFACTURING CO. — P. O. BOX 85 CORAOPOLIS, PA.

BREVITY—Identify by IEN - 8808 if you write the maker

power modernization

lowers production costs . . .

with control of speed

STERLING SPEED-TROL

. . . Gives You Variable Speed Control Necessary For:

- PROCESS CONTROL OF: Temperature — viscosity — level — pressure — flow — etc.
- TIME CONTROL OF: Baking — drying — heating — cooking — pasteurizing — soaking — chemical action — etc.
- EQUIPMENT ADAPTATION TO: Load variation — sequence synchronization. Size — tension — hardness or shape of materials to be processed — machined — conveyed — blended — mixed — etc.
- VARIATIONS IN: Quality — quantity — operators' abilities — etc.

Ask for your copy of pictorial bulletin No. C-62 showing Sterling Electric Power Drives Turning The Wheels of Industry.

STERLING ELECTRIC MOTORS

Plants: New York 51, N. Y.; Los Angeles 22, California; Hamilton, Canada; Santiago, Chile. Offices and distributors in all principal cities.

NEWS NOTES — Concluded

"Lubrication chart for industrial trucks"

BREVITY—Identify by IEN - 8809 if you write the maker

MANAGEMENT . . Booklet for employees describes personnel policies during the emergency

Daystrom Inc.
202 Elmora Ave., Elizabeth 2, N. J.

Company's attitude on personnel policies is stated in new 16-page booklet distributed to employees of its six manufacturing subsidiaries. Title is "National Defense Program Manpower Policies." Subjects include new employees, promotions, training, wages, health standards, information, security measures. Selective Service assistance.

BREVITY—Identify by IEN - 8810 if you write the maker

TRAPS . . Sixteen questions and answers in booklet on steam and its applications including traps

Sarco Co.
Room 2925 Empire State Bldg., New York 1, N. Y.

Booklet 2171 consists of 16 questions and answers on steam, starting with "How little steam do you need?". Answers are in the form of suggestions on how to use steam efficiently for heating and process operations. Title of the new booklet is "How Increasing Your Steam Costs Can Save Money".

BREVITY—Identify by IEN - 8811 if you write the maker

TRUCKS . . Lubrication chart on industrial trucks tells where, when and how much

Hyster Co.
2916 N. E. Clackamas St., Portland 8, Oregon

Eight models of the company's industrial trucks and cranes are covered by new Form 1102, a 16½ by 21½-in. chart that folds into 8¼ by 5½-in. size. It lists 26 lubrication points and the amount and type of lubricant to apply at intervals of 8, 50, 100, 200 and 500 hr. of operation.

BREVITY—Identify by IEN - 8812 if you write the maker

TRUCKS . . Sound color film on use of trucks and hoists in material handling

Yale & Towne Mfg. Co.
11002 Roosevelt Blvd., Philadelphia 15, Pa.

"Top Performance" titles new 22-min. color sound motion picture now available for group showing. It illustrates the uses in material handling of electric and gasoline fork lift trucks, platform and pallet trucks, hand and electric hoists, truck attachments, in a variety of applications.

BREVITY—Identify by IEN - 8813 if you write the maker

TUBES . . Booklet of corrosion data on stainless steel tube and pipe with recommendations

Carpenter Steel Co.
131-35 Springfield Road, Union, N. J.

"Corrosion Notebook" titles new 16-page booklet of technical data on corrosion resistance of various stainless steels. It describes types of corrosion, features a table of corrosion resistance to materials from acetic acid to trichlorethylene.

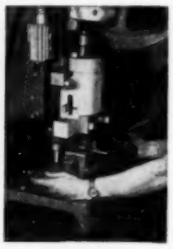
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

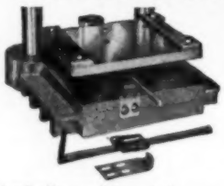
BREVITY—Identify by IEN - 8814 if you write the maker

BREVITY—Identify by IEN - 8815 if you write the maker

Adjustable Automatic Stock FEED STOP for DIES

Dahlstrom Light Duty AUTOSTOP





No drill jig . . .
No slotting . . .
No milling . . .

$1.75

Tested and improved through the years, the Dahlstrom Autostop will save hours of your high priced labor. Adjustable to work with blanking, progressive and compound dies. Mounts on stripper plate in 15 minutes. Handles sheet steel up to 1/16" x 6" or equivalent weight.

TO INSTALL: Just drill one 7/36-inch hole, then drill and tap four mounting holes per directions. That's all there is to it!

Trial order $1.75 each; lots of 12 $1.50 each. State whether for use on compound or progressive dies. *Write for free pamphlet.*

By the makers of the DAHLSTROM TAP GUIDE

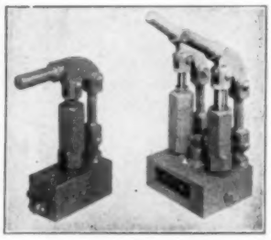
Dahlstrom MANUFACTURING COMPANY
2516 W. LARPENTEUR AVE. • ST. PAUL 8, MINN.

BREVITY—Identify by IEN - 8816 if you write the maker

HAND HYDRAULIC PUMP

Single and Double Designs

To 20,000 P. S. I.



Interchangeable Pistons ⅜-½-¾ inch

★

Integral Release Valve

★

Dual Pump Unit Reservoir 360 cu. in.

Pressure range is 3,000 to 20,000 P.S.I. Pipe connections ¼" N.P.T. Handle length is 18 inches. Weight is 8 to 18 pounds. Unit can be bolted or welded into position.

WILLIAM S. PINE

1637 E. 22nd St., Los Angeles 11, Calif.

BREVITY—Identify by IEN - 8817 if you write the maker

RAMSCO

FREE TURNING

BALL BEARING SWIVEL FITTINGS

FOR LIQUIDS, GASES, STEAM, AND OTHER CHEMICALS. HOT OR COLD SERVICE. CONTINUOUS OR OCCASIONAL ROTATION SERVICE.

360° FREE ROTATION—1, 2 AND 3 PLANES

Your particular piping problems solved. You name it—we have it. Over 500 sizes, types, styles. Sizes: ⅜" to 14" low pressure; ⅜" to 6" high pressure. Corrosive service or steam fittings 1000 psi. and temp. to 750°F., asbestos or Teflon packed. Low pressure fitting to 1000 psi. and temp. to 225° F. High pressure fittings to 15,000 psi. and temp. to 225° F. Gear driven types available.

Send for complete catalog and prices. State kind of service, pressure, temperature, pipe size and indicate style at left, threaded, flanged or weld ends.

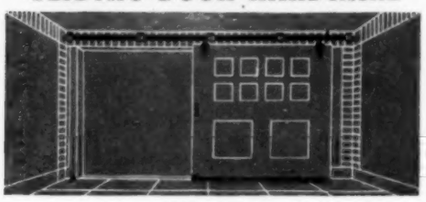
RASMUSSEN MFG. CO.
12305 INDUSTRIAL AVENUE
HOLLYDALE, CALIFORNIA

RAMSCO

BREVITY—Identify by IEN - 8818 if you write the maker

COBURN

SLIDING DOOR HARDWARE



. . . LOW INSTALLATION COST
. . . SMOOTH, EASY OPERATION
. . . LONG, TROUBLE-FREE LIFE
. . . ADAPTABLE FOR BOTH NEW AND REMODELING JOBS

Sliding door hardware for industrial applications of all types: Straight-sliding, sliding-folding, around-the-corner, roundhouse and fire doors.

For additional information write to Sales & Engineering, 56 Sterling St., Clinton, Mass. or consult your classified telephone directory.

THE COLORADO FUEL & IRON CORPORATION—Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Clinton, Massachusetts

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL & IRON CORPORATION
CF&I

BREVITY—Identify by IEN - 8819 if you write the maker

Safety is no Accident!

It's engineered into SAFWAY maintenance towers

Only Master Welders work on SAFWAY Equipment

Interchangeable parts constructed by safe, strong, lifetime welding of high carbon steel tubing.

All SAFWAY Equipment Treated with Rust Inhibitor

Maintains accurate fit of parts and fasteners to assure safe, rigid maintenance towers.

Enamel is Baked on All Surfaces, Inside and Out

Improves appearance of equipment—helps insure lasting fit of parts and long, safe life.

All SAFWAY Equipment is Engineered to Last

With only routine care, Safway equipment will deliver a lifetime of safe, efficient service.

Write for Free Bulletin IEN-951

RENTED and SOLD by distributors everywhere

SAFWAY STEEL PRODUCTS INCORPORATED
6228 West State St.
MILWAUKEE 13, WIS.
Manufacturers of Tubular Steel Scaffolding and Equipment

BREVITY—Identify by IEN - 8821 if you write the maker

TACHOMETER . . Three range electric, specified readings, overall at 50 to 1

Source: METRON INSTRUMENT CO.
430-34 Lincoln St., Denver 9, Colo.

Series 42P is a new tachometer indicator that reads the output from a small generator head in terms of speed. The head applies at the point at which speed is to be measured and connects electrically to the indicator in its fixed position on a panel or wall. The unit applies with any of the company's line of actuating heads in standard design.

It is available to specification in three ranges within the overall of 50 to 1 to a maximum of 100,000 rpm. or equivalent. Indicator and generator can be located up to 1,000 ft. apart. Desired range is selected at a knob below the 4-in. indicating dial. The unit shown in the illustration reads to 100, 200 and 500 rpm.

BREVITY—Identify by IEN - 8822 if you write the maker

CLEANING . . Deflocculator helps remove paint from spray booth

Source: KELITE PRODUCTS INC.
P. O. Box 2917-A, Terminal Annex, Los Angeles 54, Cal.

For use on paint but not enamel

Skimeze is a new concentrated semi-paste material for use in water-wash paint-spray booths to bring over-spray to the surface of the water tank so it can be skimmed off at intervals. The material is employed in a ratio of 0.2 to 0.25 oz. per gal. of water and about ¼ lb. is added for each 100 gal. of water for each day of operation.

The booth should be drained and refilled at weekly intervals. The deflocculated paint should be skimmed at least once each shift. The material is nearly neutral in pH.

BREVITY—Identify by IEN - 8823 if you write the maker

PRESS . . Hand hydraulic design for laboratory use, rates 1½ ton

Source: KNUTH ENGINEERING CO.
2615-19 N. St. Louis, Chicago 47, Ill.

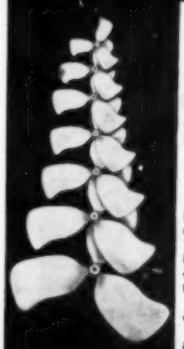
Model 100 designates new hand-operated press with an upward-acting 6 by 6-in. table that can be raised under pressure through a 6-in. stroke. The upper head is adjustable vertically on the supporting side members. Overall height is 17 in. and base dimensions are 8 by 8 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8824 if you write the maker

Kloppenborg (one piece) Cast Aluminum

EXHAUST and CIRCULATING FAN BLADES



INDUSTRIAL USE

Where air is to be moved — Kloppenborg one-piece high grade cast aluminum alloy fan blades are proving exceptionally efficient. Kloppenborg Fan Blades are purchased by many of America's leading industrial plants.

SEVEN SIZES

Kloppenborg Fan Blades are made in 7 sizes from 12" to 24" and are rated at 1750 RPM to deliver from 1225 to 8165 CFM. They are machine bored to most shaft specifications and are carefully balanced. YOUR maintenance men can install them easily.

Send today for a catalog on blades and all other parts needed for fans.

DO 97 orders will receive special consideration.

KLOPPENBORG ALUMINUM FOUNDRY
Established 1938
DAVENPORT 5, IOWA

BREVITY—Identify by IEN - 8825 if you write the maker

Hammond of KALAMAZOO says WET

ABRASIVE BELT GRINDERS—POLISHERS

ABRASIVE BELTS
- CUT COOLER
- CUT FASTER
- DO NOT DISCOLOR OR BURN WORK
- IMPROVE FINISH
- STEP UP PRODUCTION

Model VH-6 — WET-n-DRI, 6" Abrasive Belt Grinder-Polisher, Vertical or Horizontal Operation. Independent coolant unit or water main connection.

Model 400 — WET-n-DRI, 4" Abrasive Belt Grinder-Polisher. Floor or Bench Models. Independent coolant unit or water main connection.

Hammond Machinery Builders
1607 Douglas Avenue, Kalamazoo, Mich'gan

BREVITY—Identify by IEN - 8826 if you write the maker

Dick 960 A B Dick 960 A B Dick 960
GRAPH MIMEOTYPE MIMEOGRAPH MIMEOTYPE

NEW A. B. DICK MIMEOGRAPHS black-on-white COPIES or colored copies of anything typed, written or drawn produced FAST on most all paper and card stocks at speeds ranging up to 180 copies per minute and EASY on today's A. B. Dick mimeographs with many new features and improvements for more efficient operation.

WRITE TODAY for full details

A B DICK COMPANY
5700 Touhy Ave. • Chicago 31, Illinois
For use with all makes of suitable stencil duplicating products.

BREVITY—Identify by IEN - 8827 if you write the maker

Safest grinder made...

the DELTA Bench Type TOOL GRINDER

—"IT CAN'T FORGET ITS GOGGLES"

WHEELS—Absolute true balance, vibrationless for accurate tool grinding.
TOOL RESTS — Fully machined. Allow vertical and horizontal adjustment. Designed for full use of both sides of wheel. Easily detached.
WHEEL GUARDS—Heavy cast iron, steel side plates. Meet strictest regulations. Chute discharges dust. Spark guard adjustable.
SAFETY SHIELDS—Patented Twin-Lite, double-thickness shatter-proof glass. Lamps floodlight wheels. No glare.
BEARINGS—Precision double-seal ball bearings. No oiling for life of bearing.

WRITE FOR CATALOG

There's a Delta Power Tool for Your Job - Wood or Metal Working
53 MACHINES—246 MODELS—MORE THAN 1300 ACCESSORIES
For Delta dealers, see your Classified Phone Directory under "Tools"

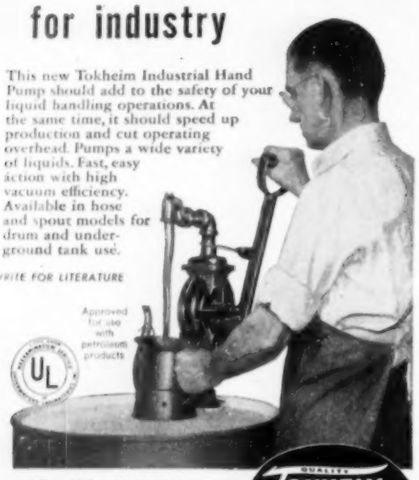
DELTA MILWAUKEE
DELTA POWER TOOL DIVISION
Rockwell MANUFACTURING COMPANY
615K E. VIENNA AVENUE, MILWAUKEE 1, WISCONSIN

BREVITY—Identify by IEN - 8828 if you write the maker

SAFER liquid handling for industry

This new Tokheim Industrial Hand Pump should add to the safety of your liquid handling operations. At the same time, it should speed up production and cut operating overhead. Pumps a wide variety of liquids. Fast, easy action with high vacuum efficiency. Available in hose and spout models for drum and underground tank use.

WRITE FOR LITERATURE



General Products Division
TOKHEIM OIL TANK AND PUMP COMPANY
1654 Wabash Ave., Fort Wayne 1, Ind.
Factory Branch: 1309 Howard St.
San Francisco 3, California

QUALITY TOKHEIM DOUBLE-ACTION HAND PUMPS

BREVITY—Identify by IEN - 8829 if you write the maker

Generalift PALLET BOXES

For large business
For small business
For all business

SEND FOR FREE BOOKLET TODAY

GENERAL BOX COMPANY..
★ ★ ★ ★ ★ engineered shipping containers

GENERAL OFFICES: 508 N. Dearborn St., Chicago 10, Ill.
DISTRICT OFFICES AND PLANTS: Cincinnati, Denville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, Sheboygan, Winchendon.
Continental Box Company, Inc., Houston, Dallas.
General Box Company of Mississippi, Meridian, Miss.

BREVITY—Identify by IEN - 8830 if you write the maker

LET Clarke SHOW YOU . . .

A Better Way of Floor Care!

HERE IS JUST PART OF THE CLARKE LINE:

CLARKE FLOOR MAINTAINERS
Four sizes for any application. Scrub, wax, polish, steel wool, sand, and shampoo. Improved safety switch. "Self-lifting" wheels.

Only actual use can demonstrate the overall superiority of Clarke maintenance machines. Widespread use in churches, schools, hotels, hospitals and industry is only partial assurance of guaranteed performance. We want to show you — on your own floors — why Clarke machines have long been preferred for all phases of floor care.

Sales and Service Branches in All Principal Cities

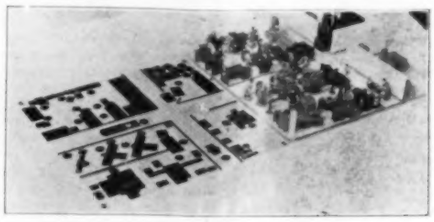
CLARKE WET and DRY VACUUM CLEANER
Picks up water, dirt. Quick dump valve, no lifting. Powerful suction . . . neoprene hose.

CLARKE SANDING MACHINE COMPANY
289 Clay Street, Muskegon, Mich.
Please rush me hints on easier and faster floor care and more information on the following machines:
Clarke Floor Maintainers ☐
Clarke Wet and Dry Vacuum Cleaner ☐
Please arrange a free demonstration ☐
NAME _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

BREVITY—Identify by IEN - 8831 if you write the maker

LAYOUT . . Equipment templates and sectioned sheet for blueprinting

Source: VISUAL PLANNING EQUIPMENT CO.
River Road & Pennsylvania Ave., Oakmont, Pa.



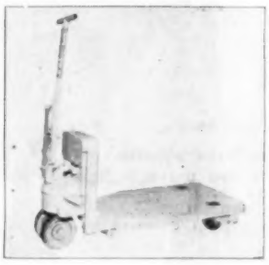
Opaque templates with self-adhesive facing and a sectioned transparent-plastic sheet have been added to the company's line of scale models for three-dimensional plant layout, previously described IEN-1902-51. The templates and the sheet are on the same scale, ¼ in. to the foot, as the equipment models so they can be secured to the sheet and left in place after the models themselves have been positioned and then removed from the layout.

The resulting sheet, with the templates in place, serves as a master from which blueprints can be made in required number in the usual manner. When a change is to be made the templates can be removed from the sheet and repositioned. Repro-Templet System is the designation.

BREVITY—Identify by IEN - 8832 if you write the maker

TRUCK . . Hand lift platform unit in three sizes, 2,500 to 6,000 pounds

Source: BARRETT-CRAVENS CO.
4641 S. Western Blvd., Chicago 9, Ill.



Three models, all with hand-powered lift movement through 6 in., have been added to the company's line of platform lift trucks under the trade name Hydrolift. The smallest Type ED and the 4,000-lb. Type LD are available in narrow-standard width at 7⅝ in. or wide-standard at 24¾ in. with platform lengths at 36 to 72 inches. The largest unit, with rating at 6,000 lb., measures 7⅝ or 25 in. in the two available widths. Length is also in a range between 36 and 72 inches.

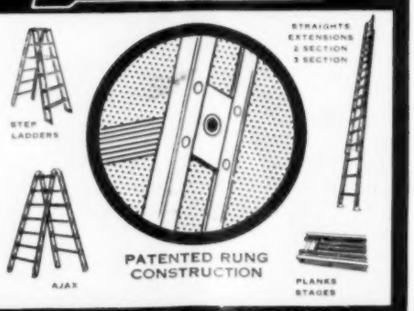
Lift action is by operating the steering handle as a pump lever. Release for lowering is at a thumb handle. The assembly is on Timken bearings with semi-steel wheels. Rubber or composition wheels can be specified. Illustrated information is contained in 24-page Bulletin 5141.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
Hundreds of products are listed in the index, page 114

BREVITY—Identify by IEN - 8833 if you write the maker

LOUISVILLE Safe-Weight ALUMINUM LADDERS



Louisville Safe-Weight products are designed for maximum safety on heavy duty jobs. Corrugated rungs are reinforced and then securely riveted to special extruded aluminum side rails. This construction insures against rung loosening or twisting. There's no deterioration, no splinters, cracked rails, dry rot. Send for catalog.

LOUISVILLE METAL PRODUCTS CO.
1101 W. OAK ST., DEPT. Y, LOUISVILLE 10, KY.

BREVITY—Identify by IEN - 8834 if you write the maker

VARGLAS permafil SLEEVING

Shortly after our first announcement of Varglas Permafil Tubing, engineers began praising its many features — especially its extra flexibility and toughness.

Now, for the first time, Varglas Permafil Sleeving is available in N.E.M.A. grades C-2 and C-1. This new sleeving is lighter coated than the Permafil Tubing but it frequently does the insulating job where tubing was formerly used — and, of course, the cost is much less. Available in coils. Write for free test samples and prices.

VARFLEX CORPORATION
306 Jay St. Rome, N.Y.

BREVITY—Identify by IEN - 8835 if you write the maker

IT'S HERE!

Grafo R-3

A Smokeless Colloidal Graphite

FORGING COMPOUND

that
Increases die life
Insures surface quality
Eliminates fire hazards

A WORKING SAMPLE SENT ON REQUEST

Other Grafo Colloidal Products Available For All Industrial Lubrication

"Grafo" Colloidal Graphite may be obtained in water, petroleum oil, castor oil, in concentrated, semi-concentrated and ready-to-use mediums.

Write Us Regarding Your Special Applications

GRAFO COLLOIDS CORPORATION
MANUFACTURERS OF Grafo COLLOIDAL PRODUCTS
SHARON, PENNSYLVANIA

BREVITY—Identify by IEN - 8836 if you write the maker

Its all in the Heat Treatment

ORIGINATORS OF THE SUPER SAFE STEEL STAMPS

The "Tough" back to absorb hammer blows without crushing or distorting —The "SOFT" center to cushion the shock — The "HARD" tip to insure cleaner impressions and a longer lasting stamp make the RICK the better safer stamp. These stamps are made in ANY type to fit ANY holder.

WRITE TODAY for ADDITIONAL INFORMATION

We are also manufacturers of—
- Special branding and knurling wheels
- Engraved plastic molds . . .
- Name stamps . . .
- Designs and trade marks . . .
- Embossing dies . . .
- Various Marking Dies and Tools

PITTSBURGH STENCIL and TOOL COMPANY
REEDSDALE and SCOTLAND STREETS
PITTSBURGH 12, PA.

BREVITY—Identify by IEN - 8837 if you write the maker

an E-A-S-Y QUARTER TURN

You can forget about binding, sticking valves when you install DeZurik EASY-OPERATING Plug Valves. DeZurik's exclusive ECCENTRIC ACTION opens and closes the line with a smooth quarter-turn, completely free from friction, always instantly responsive. These are the valves with the rugged rubber-faced plug that STOPS LEAKS ON ANY FLOW. There's a DeZurik Model and Size to handle anything that's piped and handle it perfectly!

TO OPEN FULL OR CLOSE TIGHT!!

DeZURIK SHOWER CO.
SARTELL, MINNESOTA
(Made in England by Millspaugh, Ltd.—Sheffield)

BREVITY—Identify by IEN - 8838 if you write the maker

Wilshire REALLY PAYS OFF!

MODEL 1000
Super Heavy Duty with forward and reverse drive, 100% visibility.

CUTS Your SWEEPING COSTS 75%

Let's face it! The hand sweeper can be a grim reaper of your profits...as it has been in hundreds of large and small plants. Their answer?..."The Wilshire Power Sweeper!" It's doubly efficient because its two-way brush and vacuum action picks up everything from cigarette butts to pop bottles in one easy operation. It's doubly economical, too, because one man does the work of a cleanup crew. Make us prove how much the Wilshire Power Sweeper can cut your sweeping costs with a free demonstration on your job. Write for full information and dealer nearest you.

FACTORY TESTED...
90-DAY GUARANTEE
For dealer nearest you, write Dept. F-9.

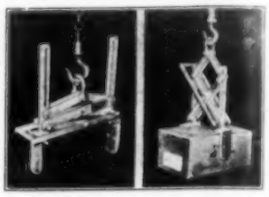
MODEL 800 America's favorite Heavy Duty Sweeper with finger-tip dual control. (Sulky optional.)

Wilshire
POWER SWEEPER CO.
526 W. Chevy Chase Drive
Glendale 4, Calif.

BREVITY—Identify by IEN - 8840 if you write the maker

HANDLING . . Adjustable load grab locks open upon load release movement

Source: CLEVELAND BEACON PRODUCTS CO.
1482 Lakeside Ave., Cleveland 14, Ohio



Locking arm that operates by gravity in this new Beacon Claw holds the load-gripping jaws apart so the grab can be applied over a new load without having to open it. The arm is lifted when the grab is in position so upward movement by the crane or hoist hook grips the load and lifts it.

Three sizes have load width ranges from 4 to 10 in., from 10 to 20 in., from 20 to 36 inches. The smallest unit will lift loads from 400 to 750 pounds. Two larger assemblies rate 500 to 1,000 pounds. A characteristic is that the load-gripping shoes remain in parallel position as they move in and out.

BREVITY—Identify by IEN - 8841 if you write the maker

CORROSION PROOFING . . Oil additive displaces water, moisture from metal

Source: PENNSYLVANIA REFINING CO.
119-123 W. North St., Butler, Pa.

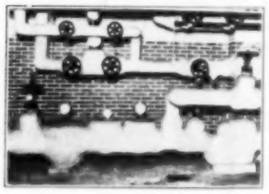
Bulletin upon request

Petrobase 210 is a new liquid synthetic rust-preventive composition for addition in quantities of 1 to 5 percent to Government Specification preservative oils and compounds, to industrial preservative or flushing oils, to household oils used for general lubricating purposes, to water displacement fluids which selectively wet metal surfaces and provide a thin oily film as a rust preventive on the surface. The material is available in tank cars and in 55-gal. steel drums weighing about 440 lb. net. List is 24¾ cents per pound in the drums.

BREVITY—Identify by IEN - 8842 if you write the maker

INSULATING . . Mineral wool cement for walls, process equipment, pipe

Source: PHILIP CAREY MFG. CO.
51 Carey Walk, Dept. H, Cincinnati 15, Ohio



Type MW-50 is a new insulating cement made of mineral wool pellets, asbestos fibers, bonding clay and a rust inhibitor. It is applied with a trowel, following mixture with water. It bonds to cold or hot metal surfaces and is suited for service in temperatures to 1,000 deg. F. The company is prepared to supply a free 5-lb. sample to companies desiring to test the material in service in their plants.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8843 if you write the maker

NEW PERMANENT NON-SLIP

FIRM-GRIP Genuine NEOPRENE LATEX GLOVES

- Permanent NON-SLIP on all 5 Fingers and Palm. Highly efficient embossed surface is *integral part* of glove
- Impregnable to ACIDS, CAUSTICS, OILS
- Curved FINGERS for Comfort and Easy Use

No. 5740-S LONG GAUNTLET
Length 14", Gauge .030 to .040
Sizes 9, 10, 10½, 11, 12

No. 5720-S LIGHT DUTY
Length 10½", Gauge .017 to .020
Sizes 7, 7½, 8, 8½, 9, 9½, 10, 11

★ Write for sample and prices

SEIBERLING LATEX PRODUCTS CO.
AKRON 9, OHIO

200-5th Ave., New York
Merchandise Mart, Chicago

BREVITY—Identify by IEN - 8844 if you write the maker

FASTER CLEANING AND SERVICING ON-THE-JOB!

IN LESS THAN A MINUTE—without the aid of tools—you can service a Hansen Tacker on-the-job!

Simply swing-out the Take-up Jaw, insert Channel Cleaner, and swing-in the Take-up Jaw (see pictures at left). Only sixty seconds to service!

No job delayed; no waits for return from factory. Hansen *stays on the job!* Tacks faster! Works easier! Saves man-hours!

REQUEST BOOKLET!

A. L. HANSEN MFG. CO.
3051 Ravenswood Ave.
CHICAGO 40, ILL.

BREVITY—Identify by IEN - 8845 if you write the maker

MOVE MATERIALS faster with fewer workers

An excellent way to cope with the dwindling labor supply is to use conveyors to aid workers in moving materials. All man hours thus saved can then be used on productive operations. You have available a complete line of MHS Pre-engineered Conveyors for handling packages, parts between manufacturing processes, progressive assembly, inspection, order make-up and into or out of storage.

All component conveyor parts are simplified and standardized—mass produced for maximum manufacturing economy. They are capable of an unlimited number of combinations to meet any specific set of requirements. Thus you may have the advantages of a custom-built conveyor without the engineering expense or without any delay for designing.

Write for Bulletin PE 1 on MHS Pre-engineered Conveyors

Mechanical Handling Systems, Inc.
4605 NANCY AVE. • DETROIT 12, MICH.
Offices in Principal Cities

BREVITY—Identify by IEN - 8846 if you write the maker

Versatile
aid for plant maintenance men

HEIN-WERNER HYDRAULIC JACKS
. . . make pushing and lifting jobs easier

These easy-operating, super-powerful jacks can be used to move, lift or push machinery, equipment, stock bins. Also can be used for pulling gears and pinions, bending pipe and pressing bushings.

Made in models of 3, 5, 8, 12, 20, 30, 50, and 100 tons capacity. Hein-Werner also makes "Push and Pull" Hydraulic Jacks of 4, 10, 20 tons capacity. See your industrial supply distributor or write us.

Hein-Werner HYDRAULIC JACKS

HEIN-WERNER CORPORATION • WAUKESHA • WIS.

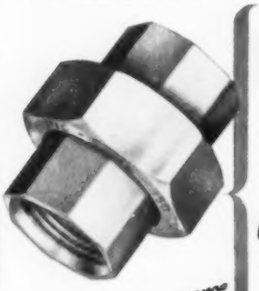
BREVITY—Identify by IEN - 8847 if you write the maker

Ingersoll specializes in STEELS that resist corrosion that resist heat

BW

Ingersoll STEEL DIVISION
BORG-WARNER CORPORATION
310 South Michigan Avenue, Chicago 4, Illinois
Plant New Castle, Indiana

BREVITY—Identify by IEN - 8848 if you write the maker



PIC STEEL UNIONS

are specially designed for original equipment

Attractive in Appearance 100% Zinc Plated!

From coast to coast manufacturers are specifying this *better* 150# union on products where piping is required. It's attractive, strong, *rust protected even on threads.* Ends are made from heavy steel pipe coupling stock—uniformly flat sided for easy installation with open-end wrenches. Tightness is assured by a special wedge-type bronze seat. Yet the price is less than a galvanized, no more than a black malleable union.

Write for Free Samples!

DART UNION COMPANY
130 THURBERS AVENUE, PROVIDENCE 5, R. I.

BREVITY—Identify by IEN - 8849 if you write the maker

ILLINOIS
AUTOMATIC FLUID CONTROL EQUIPMENT

Where close control of steam circulation, pressures and temperatures is vital . . . whether for heating or process work . . . consult ILLINOIS. You will find the correct device to solve your problem.

Manufacturers of the most complete line of automatic equipment to control steam from boiler outlet to return inlet.

Conserve and repair your present equipment and replace worn out, steam-wasting units with ILLINOIS specialties.

Consult us on your requirements or write for Bulletins

ILLINOIS ENGINEERING COMPANY
INCORPORATED 1900
RACINE AVENUE AT 21ST STREET • CHICAGO 8

BREVITY—Identify by IEN - 8850 if you write the maker

FUSE . . Double element unit protects small motors against burn-out

Source: BUSSMANN MFG. CO.
2538 W. University St., St. Louis 7, Mo.

Fustat trade names a double-element design of plug fuse now available in box-cover assemblies. It applies on an outlet or switchbox of standard design carrying the 110-volt circuit to a motor rating ¾ hp. or less.

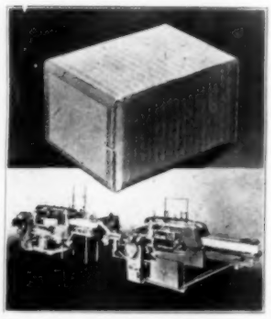
Three combinations include a plug-in receptacle with the Fustat, a switch in place of the receptacle, or the Fustat alone. Any of these assemblies mount on any of four covers measuring 2¼ or 2¾ in. in width, 4 in. in diameter or 4 in. square. Assemblies with the switch rate only to ½ hp. on ac. 110-volt motors. Units without the switch will take any motor rating ¾ hp. or less.

Two elements are employed, a fuse link which handles only heavy overloads above 500 percent and a thermal cut-out which handles light overloads under 500 percent. The fuse link will not open on any but very heavy overloads so it handles the motor-starting current. The thermal cut-out must melt solder before it can open and the heavy starting current does not last long enough to do this under normal conditions. At the same time a small excess of current long continued will melt the solder and open the circuit.

BREVITY—Identify by IEN - 8851 if you write the maker

PACKAGING . . Automatic machine encloses cartons in corrugated paper

Source: PACKAGE MACHINERY CO.
Longmeadow St., Springfield, Mass.

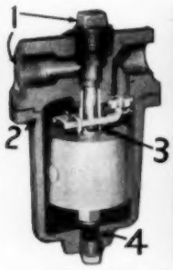


Model FF Special is a new packaging machine shown to the left in the illustration. It operates with a standard Model FF to enclose one-pint ice-cream cartons in an insulating wrap of corrugated paper and then to wrap the insulated package in a printed waxed-paper wrapper.

The corrugated paper is cut from a roll, is slit for end folds and then scored and formed around the carton. Seals are applied to hold the folded ends. Production is 60 to 80 cartons per minute.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

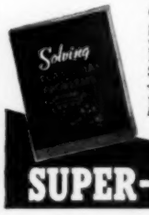
BREVITY—Identify by IEN - 8852 if you write the maker



4 Super-Silvertop STEAM TRAP FEATURES SAVE YOU MONEY

1. **SIMPLIFIED PIPING**—straight-in-line or as an elbow saving 6 fittings and 60 minutes installation time.
2. **EASY ACCESSIBILITY**—parts cleaned and replaced in a short time without removing trap from the line.
3. **GUIDED BUCKET**—Hexagonal tube guides bucket, reducing bucket damage.
4. **VALVE AND SEAT EASILY REMOVED**—held in place by a clamp and 2 screws.

Check these four advantages in your present steam trap, then write for your free copy of "Solving Steam Trap Problems," telling of many more Super-Silvertop steam trap economies.



THE V. D. ANDERSON COMPANY
1931 West 96th Street • Cleveland 2, Ohio
In Canada—Bawden Industries, Limited, Toronto

SUPER-SILVERTOP STEAM TRAPS

BREVITY—Identify by IEN - 8853 if you write the maker

BOSTON Gear FLEXIBLE COUPLINGS

Available from nearby stock—at 80 Authorized Boston Gear Distributors

Quiet, smooth operation is assured by oil resistant, synthetic rubber insert that absorbs vibration and shock. Easy to install. Dust and dirt proof. For shaft diameters from ¾" to 1½".

For sizes, prices, horsepower and torque ratings, see Boston Gear Catalog No. 55. Free copy mailed on request.

BOSTON Gear stocks are New

BOSTON GEAR WORKS
63 HAYWARD ST., QUINCY 71, MASS.

BREVITY—Identify by IEN - 8854 if you write the maker

"HOLD EVERYTHING"

with this strong, open-side, all-purpose handy vise.

Takes work from 3 sides
Range from 2⅜" to 8⅝"
Positive non-slip grip

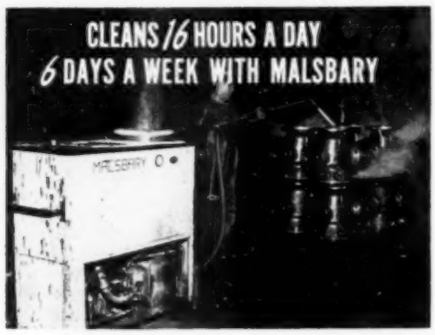
Ideal for valves, manifold fittings and all other hard-to-hold items.

● Heavy, one-piece malleable cast-iron body is virtually indestructible. Takes work from 3 sides. Four easily replaceable dies in lower jaw provide positive grip to hold work safely in balanced non-slipping position. Easily installed non-scarring soft jaws also available. Vise screw made of toughest steel has coarse Acme thread for rapid adjustment. Counterbalanced handle, mounted at efficient arm height, can be quickly extended for extra leverage. Wide range replaces three ordinary vises. Far safer and faster than chain tongs. For folder and prices address . . . .

BAKER OIL TOOLS, INC.
BOX 2274 TERMINAL ANNEX, LOS ANGELES 54, CALIFORNIA

BREVITY—Identify by IEN - 8855 if you write the maker

CLEANS 16 HOURS A DAY 6 DAYS A WEEK WITH MALSBARY



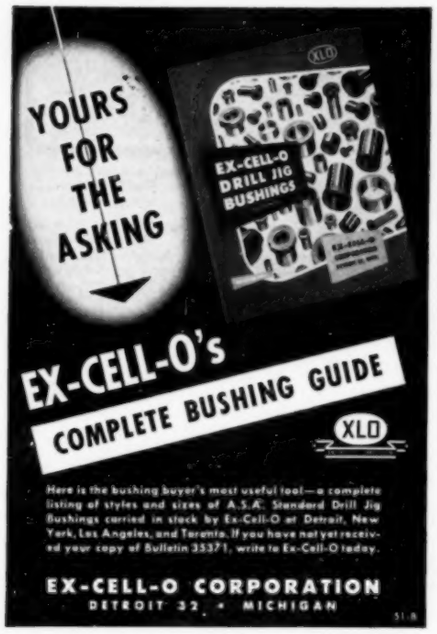
Nordstrom Valve Div., Rockwell Mfg. Co., uses 2 Malsbary Cleaners—a Model 220 for production cleaning before assembly; a 110 (pictured) on machinery, lift trucks, walls and floors. These cleaners blast away all excess lubricant and dirt-filled grease—reduce fire hazards; speed production.

Malsbary Cleaners are gadget-free, rugged and dependable. No trained "technicians" required. And Malsbary offers the only complete line—2 steam vapor models, pressures 120-150 lbs.; 3 heavy-duty models with 5 cleaning actions and pressures 250-400 lbs. Stationary, portable and trailer mount.

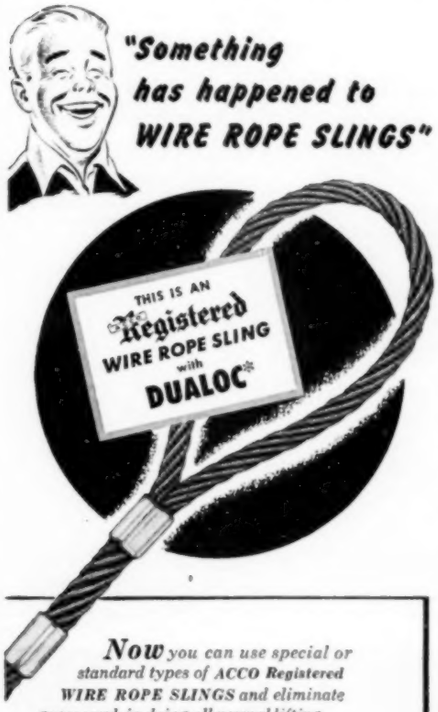
Write today for free folders and actual job data.

MALSBARY MANUFACTURING CO. SINCE 1921
Room 709
845 92nd Ave.
Oakland 3, Calif.

BREVITY—Identify by IEN - 8856 if you write the maker



BREVITY—Identify by IEN - 8857 if you write the maker



Now you can use special or standard types of ACCO Registered WIRE ROPE SLINGS and eliminate guess-work in doing all normal lifting.

STOCKED NEAR YOU

ACCO WIRE ROPE SLING distributors carry in stock . . . for immediate delivery . . . standard diameters and lengths, and links, "safety" shackles, and hooks . . . all factory-tested and certified.

SAFE, EFFICIENT, ECONOMICAL

DUALOC endings are 100% efficient. They outlast the wire rope. They are safe and economical. You'll like them. Call your distributor today or write for information.

*Trade Mark Registered

MEMBER THE NATIONAL SAFETY COUNCIL

Wilkes-Barre, Pa., Chicago, Denver, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

ACCO AMERICAN CHAIN & CABLE WIRE ROPE SLING DEPARTMENT

Made by the Originators of Preformed WIRE ROPE

In Business for Your Safety

BREVITY—Identify by IEN - 8859 if you write the maker

PRINTING . . Automatic machine to screen-decorate glass and ceramics

Source: SOLAR ENGINEERING & EQUIPMENT CO. 279-83 Third St., Beaver, Pa.

Four elements make up the assembly of this new automatic screen decorating machine to print in any desired number of colors on bottles, tumblers, glass and ceramic containers at speeds to 60 per minute.

The first element is a feed table shown to the right in the illustration. It consists of a conveyor that feeds the work into an unscrambler. Recommended length for this element is 12 to 18 feet. Next is the unscrambler which lines up work to be decorated and forwards it to the printing element. The unscrambler is about 8 ft. in length. The third element for the printing operation, requiring one head for each color, measures about 5 ft. in length for single-color work. It is increased by adding a desired number of heads for multicolor operation. The fourth element is a take-out that removes the work from the printing-head section and places it on a conveyor for single line feed to a lehr. This final take-out section is 4 ft. in length not including the lehr conveyor which can be made in any length. At the end of the conveyor in front of the lehr is a power take-off for an automatic lehr stacker.

The printing section is adjustable for work of various sizes. It employs 9 holders for each printing head. They are changed from one size of work to another. Extra holders can be set up.

The machine is designed primarily for use with thermoplastic color although cold medium colors can be used. In the latter case it is necessary to have a drying conveyor between each color and a mechanism to reload the work for each.

BREVITY—Identify by IEN - 8860 if you write the maker

SWITCH . . Dual foot operated unit, 20 amp. on 110 volt ac., interlocked

Source: SIMONDS MACHINE CO. 50 Saxon Road, Southbridge, Mass.

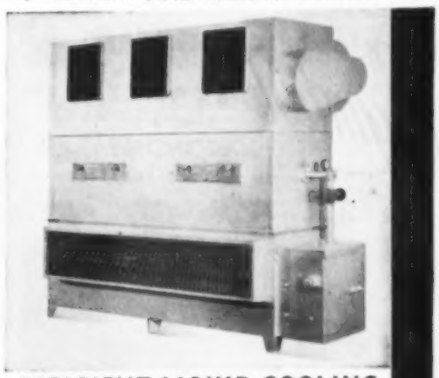
Lektro-Lok is a new "heel-and-toe" two-circuit assembly of the company's single-pole double-throw foot-operated switch. The arrangement interlocks so both circuits cannot be operated at the same time.

Pressure on one side opens and closes a circuit. Release of pressure permits the switch to return to normal "off" position. Both interiors can be wired normally open or normally closed. A single cord receptacle is employed and wiring connections are made internally. List price is $5.25 without the cord in single units.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8861 if you write the maker

BREVITY—Identify by IEN - 8862 if you write the maker



EFFICIENT LIQUID COOLING THAT SAVES ON WATER!

"Buffalo" Evaporative Coolers cool by passing liquid through closed system of spiral fin coils on which spray evaporates. It is positive, economical cooling! Indoor or outdoor installation. 3-section construction allows moving in through standard doorways. New fan wheels with hollow shaft give high efficiencies. WRITE FOR BULLETIN 3666 NOW!

- Clean closed-system cooling!
- Cool cutting oils, Diesels, other machinery!
- Low-cost installation—space saving!

BUFFALO FORGE COMPANY
496 Broadway, Buffalo, New York
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Branch Offices in all principal Cities

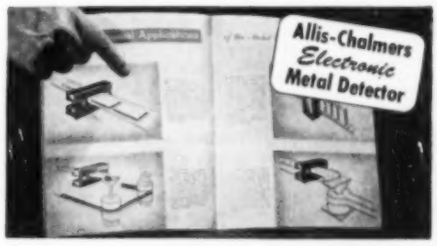
"Buffalo" NEW MODEL "F" EVAPORATIVE COOLERS

BREVITY—Identify by IEN - 8863 if you write the maker

- Removable sides to permit handling large cartons or parts.
- Motor totally enclosed inside conveyor body easily accessible through removable ventilating panel.
- Elevates to desired height with simple hoisting mechanism.
- Driven by means of roller chain to roller bearing equipped gear box.
- Main drive shaft and idler pulley operate on double-sealed ball bearing.
- Standard belt width, 12 inches. Other widths can be furnished to meet your requirements.
- Belt speed, 74 F.P.M.—adjustable if desired.

INDUSTRIAL ENGINEERING & MFG. CO., INC.
BRIMFIELD, INDIANA, U.S.A.

BREVITY—Identify by IEN - 8864 if you write the maker



METAL DETECTOR BOOKLET tells how to protect product purity

JUST ONE IDEA from this 20 page booklet can help you prevent stray metal from damaging equipment or reaching a customer in a packaged product. Numerous schematic sketches show ways of using the Metal Detector to protect processing machinery or insure packaged goods quality.

Allis-Chalmers Metal Detector is an electronic device that spots non-magnetic as well as magnetic metal particles. Pieces are located regardless of how deeply embedded.

Call your nearby Allis-Chalmers District Office for Booklet 15B7217A, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-2331

ALLIS-CHALMERS

BREVITY—Identify by IEN - 8865 if you write the maker

Symbol GRIGOLEIT OF QUALITY AND ECONOMY IN MOLDED PLASTICS

BRUSH HOLDER CAP
Screw-top caps to secure brush spring in motor.

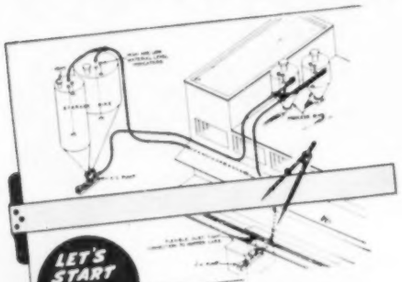
SHIPPING CLOSURES
Protects threads from dirt and damage. Made to order in various sizes.

Defense work invited on molded plastics; have facilities for small metal part fabrication or sub-assembly.

Your Key to Sales Success is molded plastics by Grigoleit . . . the symbol of quality and economy. A complete line of Pulls, Knobs, Pendants and threaded specialties ready for prompt delivery. Write for your copy of the full illustrated catalog today.

THE GRIGOLEIT COMPANY
"Over Twenty Years in Plastics"
702 E NORTH ST. DECATUR, ILLINOIS

BREVITY—Identify by IEN - 8866 if you write the maker



LET'S START FROM SCRATCH

PROBLEM—Conveying
SOLUTION—To design and build a system that will meet your requirements, better your operation

Fuller Company designs and manufactures four primary types of pneumatic conveying systems for dry pulverized and granular materials. This permits the selection of the system best adapted to specific requirements—best equipped to handle most efficiently the materials being conveyed.

Each job is considered separately. That's why we say "Let's start from scratch" . . . when the plant is in the design stage. Then a preliminary study of local conditions can be made—and the proper equipment and layout recommended by specialists in the field of pneumatic conveying. We strongly urge all prospective purchasers to avoid preliminary engineering and to permit us to submit a recommendation or engineering study.

Fuller has a tangible resource in a personnel with many years of experience in all phases of pneumatic conveying. Fuller engineers are at your service to make a study of your requirements and to make a recommendation. There is no obligation, of course.

Fuller
FULLER COMPANY, Catasauqua, Pa.
120 S. La Salle St., Chicago 3
420 Chancery Building, San Francisco 4

BREVITY—Identify by IEN - 8867 if you write the maker

THE FAMOUS MULTIFORM BENDER CUTTER

Produces Without Special Tooling — Saves Die Costs Saves on Expensive Presses

The illustration at the left shows just a few pieces produced on our famous Multiform Bender-Cutter. This efficient machine is useful in all lines of trade.

No. 5. AIR MODEL

FIVE-IN-ONE-TOOL—ALSO LARGER MODELS
Hand Operated Models Available
IT BENDS FLAT AND ROUND STOCK INTO ANY SHAPE. CUTS AND PUNCHES FLAT STOCK

J. A. RICHARDS CO. 907 NORTH PITCHER ST. KALAMAZOO 60F, MICH.

BREVITY—Identify by IEN - 8868 if you write the maker

VALVE . . Three way design, pilot controlled, 125 and 250 pounds

Source: AUTOMATIC SWITCH CO.
379-D Lakeside Ave., Orange, N. J.

Line pressure acting through a three-way pilot operates an internal piston in this new valve to position the valve for pressure delivery or for shut off and exhaust. The pilot valve is operated by a solenoid. Pressure is applied when the solenoid is energized. It is shut off and the valve is opened to exhaust when the solenoid circuit is opened. The valve is made in 1 to 2-in. sizes for 125 and 250-lb. operation. Minimum pressure is 10 lb. in sizes to 1½ inches. It is 20 lb. in the 2-in. size.

The valve is suited for use with air, gas, oil, or other non-corrosive fluids at temperatures to 180 deg. F. The solenoid can be specified for operation on 110 or 220-volt ac. or dc. Overall height is 12¾ to 16½ inches. Face to face between the pressure inlet and the cylinder ports on opposite sides of the housing measures 4½ in. on all sizes but the 2-in. size which beasures 5⅛ in. for this dimension.

BREVITY—Identify by IEN - 8869 if you write the maker

FLOORS . . Corrugated rubber mat is bonded to a ¼ in. sponge base

Source: ACE HOSE & RUBBER CO.
1704-8 S. State St., Chicago 16, Ill.

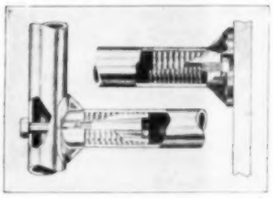
List price about $1.25 per sq. ft.

Lite Step is a new rubber-cushioned corrugated-rubber mat combining a ⅛-in. rubber top bonded to ¼ in. of sponge rubber. It provides a resilient surface on which a worker can stand without foot fatigue for long periods of time. The mat is available in desired lengths and up to 72 in. in width. It can be cut or manufactured to specified shapes and sizes.

BREVITY—Identify by IEN - 8870 if you write the maker

SCAFFOLD . . Expanding tube coupler assembles tubing in various shapes

Source: BELVIDERE ALUMINUM MFRS.
1202 Cedar St., Rockford, Ill.



Abel-Grip trade names a new wedge-type coupler made of cast iron with a steel draw-in bolt to apply inside a metal tube. The unit includes two designs of feet, one to join two tubes and one to provide a flat footing. It is available for tubes with bore from ½ to 2 in. with list price ranging from 25 cents to $1.25 each.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8871 if you write the maker

BREEZE Job-Engineered BELLOWS

ANOTHER BREEZE MARK PRODUCT

. . . Give LASTING PROTECTION Where Ordinary Bellows Fail

Breeze welded diaphragm bellows meet the operating life cycle of any equipment in which they are used *because every Breeze bellows design is individually engineered and built for the job.*

Breeze has no "stock bellows," but if you have a vibration problem in ducts, large or small, or want permanently sealed valve enclosures in any type of piping system, or need bellows for torque transmission or other uses, Breeze experience can quickly provide the answer . . . and production can meet your requirements.

A Breeze bellows is dependable because each diaphragm is designed to work well within its elastic limit. This is accomplished by thorough analysis of each application and careful design of the bellows to withstand all requirements. "Job engineering" each individual type eliminates makeshifts, assures efficient performance.

Breeze bellows are made in stainless steel, inconel, monel, nickel, steel, or other weldable alloys.

Feel free to consult us without obligation on your existing bellows requirements, or any other project where reliable welded diaphragm type bellows might solve a design problem.

BREEZE CORPORATIONS, INC.
41-V S. Sixth St., Newark 17, N.J.

OTHER BREEZE PRODUCTS: ACTUATORS · RING SHELLING · AERO-SEAL HOSE CLAMPS

BREVITY—Identify by IEN - 8872 if you write the maker

FOOT CONTROL varies WELDING HEAT!

Patent No. 2308199

Mullenbach ARCTROL

Unusual control on precision welding • Gives full-scale, remote control • Instant variations without breaking arc • Saves trips to the welder • Eliminates cratering • Gives hot starts • Increases welding speed • Regular welder operation and range unaffected.

Available for most makes of D.C. welders. Write for information giving welder name and model number.

MULLENBACH Electrical MANUFACTURING COMPANY
2300 EAST 27th STREET LOS ANGELES 58, CALIFORNIA

BREVITY—Identify by IEN - 8873 if you write the maker

Delpark FULL-FLOWING SELF CLEANING COOLANT FILTERS

FOR SOLUBLE OILS and CUTTING OILS

A gravity filter, complete and continuous filtration of the coolant removes heat-bearing solids as it comes from the work. More uniform limits, better finish, and greater accuracy are maintained with a clean wheel and lower coolant temperature.

Compare these points with your present coolant system:

- **Keeps wheel clean for faster, more accurate cutting and longer life.**
- **Less wheel dressing required.**
- **Uniform coolant temperature.**
- **Limits more easily maintained.**
- **Extended coolant life.**
- **No down time for de-sludging reservoir.**
- **Less wear on coolant system.**

These are but a few of the many advantages offered by Delpark Full-Flowing, Self Cleaning Coolant Filters. For more complete information:

Delpark INDUSTRIAL FILTRATION
Backed by 30 Years Experience in Industrial Filtration

INDUSTRIAL FILTRATION COMPANY
517 Industrial Avenue • Lebanon, Indiana

BREVITY—Identify by IEN - 8874 if you write the maker

DEFENSE CONTRACT?

FOR DEPENDABLE SUB-CONTRACTING LET GREENE QUOTE THESE JOBS . . .

STAMPINGS Over 80 presses ranging up to 125-ton capacity.

ROLLED FORMS 10 machines; simple or intricate rolled shapes.

PLATING Nickel, chrome, cadmium, brass, bronze and zinc.

POLISHING Hand and automatic equipment.

PAINTING Spray and dip; air dried or baked.

ASSEMBLIES Spot welded, screw fastened, riveted, etc. Screw machine sources available.

Put our years of prime and sub-contracting defense work experience to work for you. Write or phone today. Quotations without obligation. G-12a

Greene of Racine
Greene Mfg. Co., Inc. RACINE WIS

BREVITY—Identify by IEN - 8875 if you write the maker

QUICK ACTING
Saves Time At Every Operation

EVERLASTING Valves give you the quick action you need in many valve services. They open and close with less than a quarter turn of the operating lever . . . and the operation is easy because of the ample leverage.

And that's only one of the many advantages of the unique EVERLASTING design. . . proven by more than 40 years on the market. Its drop-tight seal is kept leak-proof because of the self-lapping action of the disc rotating over the seat each time the valve is opened or closed . . . its straight-through flow minimizes pressure loss through the valve . . . its non-wedging action prevents sticking . . . and it requires no lubrication.

With all these advantages, you have an "everlasting," ever-tight, ever-satisfactory valve that is literally unequalled for many services on process lines, emergency shut-offs, equipment outlets, boiler blow-off, fire protection, etc., and suitable for practically all fluids.

Write for descriptive bulletin.

Trade Mark "EVERLASTING" Reg. U. S. Pat. Off.

EVERLASTING VALVE CO., 49 Fisk Street, Jersey City 5, N. J.

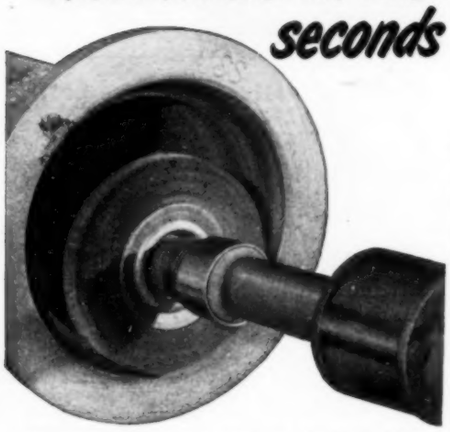
Everlasting Valves

for everlasting protection

BREVITY—Identify by IEN - 8876 if you write the maker

This Special Pittsburgh Brush*

CLEANS RED-HOT CASTINGS in 30 seconds



** An actual case history from the U. S. Pipe and Foundry Company, Birmingham, Alabama*

A PITTSBURGH brush provides the answer for U. S. Pipe and Foundry's problem of cleaning red-hot castings. This rugged brush works 40 hours a week, turning out thoroughly cleaned castings at the rate of one every 30 seconds . . . a speed record for any brush cleaning operation of this type.

LET PITTSBURGH ENGINEERS SOLVE YOUR BRUSH PROBLEMS

Pittsburgh's complete line of brushes of every type, for every purpose, will provide a practical, economical solution of any brush problem you might have. Drop us a line on your company letterhead for a copy of our new booklet that shows, through actual case histories, how Pittsburgh can help cut your brushing operation costs. Address: PITTSBURGH PLATE GLASS COMPANY, *Brush Div.*, Dept. M5, 3221 Frederick Ave., Baltimore 29, Md.

PITTSBURGH

Power Driven BRUSHES

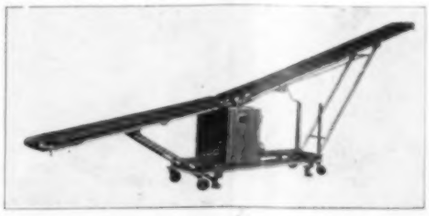
BRUSHES • PAINT • GLASS • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

BREVITY—Identify by IEN - 8878 if you write the maker

CONVEYING . . Portable belt assembly, reversible operation to stack products

Source: MATHEWS CONVEYER CO.
191 Tenth St., Ellwood City, Pa.



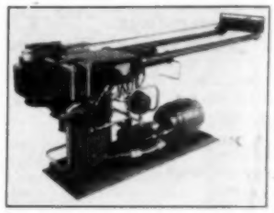
Two belt sections are hinged on a wheel-equipped stand in end-to-end arrangement in this new Western-Type conveyor. Both are connected to a reversing motor mounted on the stand. The shorter of the two sections, at the lower end, can be located between 15 and 36 in. above the floor to match delivery height of a wheel or roller conveyor over which a product is received. The longer section can be adjusted to a maximum of 121 in. above the floor in an assembly employing a 16-ft. length in this section. The unit is available with 12, 16 and 19-ft. sections with belt width at 12 or 16 inches.

The tread over which the belt operates can be specified with steel sheets for sliding action or with rollers. Capacity for unit loads is about 100 pounds. Floor locks are provide to hold in a set position. Standard operation is at 50 fpm. with a 1-hp. motor for 110-volt 60-cycle single-phase ac. Three-phase 220-volt ac. can be specified.

BREVITY—Identify by IEN - 8879 if you write the maker

BENDING . . Hydraulic machine for use on pipe, tube and flat stock

Source: WALLACE SUPPLIES MFG. CO.
1300-12 Diversey Parkway, Chicago 14, Ill.



New No. 800 self-contained hydraulic machine employs a hydraulic pump and 2-hp. motor mounted on the base for operation on 220/440-volt three-phase 60-cycle ac. The pump draws its oil supply from the column upright supporting the bending head. It delivers through valves controlled at a single operating lever. This lever is depressed to swing the head around through the degree of bend selected and to hold there until the operator has removed the finished work. Then the lever is moved upward to swing the arm back to its original position and complete the operating cycle.

The bending die is held in position by spring clips. It is a combination unit with four different sizes, one to each side. The machine can be changed from right to left-hand operation by changing the pressure and clamping arms and inserting both into holes provided for them.

Overall dimensions are 78 by 21 by 34 inches. Capacity is for a 16-gage steel tube measuring 1¼ in. in outside diameter, or its equivalent. Approximate weight with standard mandrel clearance on the new machine is 900 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8880 if you write the maker

SHAKEPROOF "SPEED NUTS"

Simplify Assembly
AND REDUCE COSTS!

SEND FOR *Free Test Kit* AND PROVE IT TO YOURSELF!

Shakeproof "Speed Nuts" increase speed of assembly, ease of application and resistance to vibration loosening—three important phases of greater fastening efficiency. Light-weight, Flat Type "Speed Nuts" replace ordinary nuts; U and J Type "Speed Nuts" are self-retaining, perfect for blind and hard to reach fastening points; Latching Type is self-retaining at mid-panel locations. Test and try Shakeproof "Speed Nuts" on your own product. Write for free Sample Kit No. 30 today.

U-TYPE FLAT TYPE J-TYPE

®T.M. Reg. U.S. Pat. Off. by Tinnerman Products, Inc.

SHAKEPROOF inc.
Fastening Headquarters
DIVISION OF ILLINOIS TOOL WORKS
2501 North Keeler Avenue, Chicago 39, Illinois

BREVITY—Identify by IEN - 8881 if you write the maker

SOUTH BEND 2-H TURRET LATHE

for Fast, Precision Machining

Its speed, accuracy and ease of handling enables the 2-H Precision Turret Lathe to lower production costs of precision parts. It is especially suited for second operations. Write for Catalog 67-F.

1" Collet Capacity . . . 1-3/8" Spindle Bore . . . 16-1/4" Swing . . . 28-1/4" Turret to Spindle . . . 12 Spindle Speeds . . . 48 Thread Cutting and Carriage Power Longitudinal and Cross-feeds . . . 96 Turret Power Feeds

MODEL 2-H PRECISION TURRET LATHE — equipped with two-speed (2 h.p.-1 h.p.—1800-900 r.p.m.), 3-phase, A.C. motor; handlever collet attachment; and coolant pump assembly.

SOUTH BEND LATHE WORKS
Building Better Tools Since 1906 • South Bend 22, Indiana

BREVITY—Identify by IEN - 8882 if you write the maker

"FLATWEAVE" SLINGS

Cut materials handling costs with Roebling "Flatweaves"

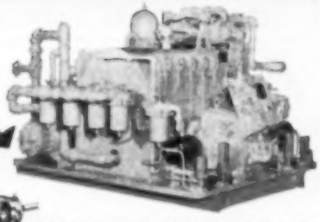
"FLATWEAVE" SLINGS are tops! Their broad, flat-bearing surface prolongs sling life. "Flatweaves" speed up operations because they're extra flexible, kink-resistant, and easy to handle.

Write for free copy of the "Roebling Sling Data Book." It gives the whole story about "Flatweaves", plus money-saving facts on the full Roebling line . . . a sling for top efficiency and economy on every job. John A. Roebling's Sons Company, Trenton 2, New Jersey.

ROEBLING

BREVITY—Identify by IEN - 8883 if you write the maker

ANOTHER EXAMPLE OF ROPER DEPENDABILITY IN HYDRAULIC APPLICATIONS



Series F Pump

ROPER PUMP QUICKLY CHARGES THE CIRCUIT IN THIS SECO UNIT

This Seco Fluid Power Package has all the essential components for automatic high-low hydraulic press operation. A fast-acting Roper Series "F" Pump is used as the low pressure generator; it supplies power to the circuit which closes the daylight opening of the press ram. Because the Roper Pump and a Seco pump operate intermittently, it is possible for the unit to operate two or more presses alternately.

Roper Series "F" Pumps operate with pressures to 300 P.S.I. — Capacities 1 to 500 G.P.M.

Send for Free Booklet

ROPER Rotary Pumps

GEO. D. ROPER CORPORATION
209 Blackhawk Park Ave., Rockford, Ill.

BREVITY—Identify by IEN - 8884 if you write the maker

LANCO INDUSTRIAL TRAILERS are built to last!

20 and 25 year records of daily service are not uncommon for Lanco Industrial Trailers built under Lansing Company's policy of good design, select materials and skilled craftsmanship. Popular Lanco Model 795 illustrated is one of the many models available with a wide choice of wheel styles and racks. Write today for information on units that will exactly fit your trailer requirements.

LANSING CO. LANCO MATERIAL HANDLING EQUIPMENT — LANSING, MICHIGAN

BREVITY—Identify by IEN - 8885 if you write the maker

COME CLEAN!

Model 218

Defense orders are coming to the clean plants because they can handle production efficiently. Be sure your plant operation is not handicapped by litter, dirt or other debris.

Send today for important Doyle Vac-It information. There's no obligation.

Doyle VACUUM CLEANER CO.

2235 Stevens St., S. W. Grand Rapids 7, Mich.

BREVITY—Identify by IEN - 8886 if you write the maker

IF YOU WALK ON IT IT CALLS FOR OPEN STEEL FLOORING

Ready for you—

THE *NEW* IDEA-BOOK "VERSATILE" OPEN STEEL FLOORING

Write for your free copy today!

This 16-page book tells you and *shows* you all about Open Steel Flooring—the strong, durable, ventilated, versatile surface that provides industrial plants with safety-sure walkways, platforms, stairs, floors, catwalks, etc. Get a copy and read the Specifications that assure top quality Open Steel Flooring . . . the flooring tailor-made to fit your individual needs—that provides safe walking-working conditions in your plant.

OPEN STEEL FLOORING INSTITUTE, INC.
2311 R First National Bank Building • Pittsburgh 22, Pa.

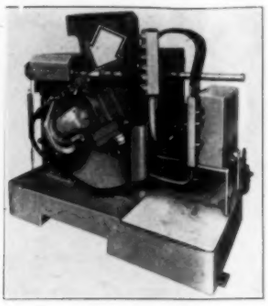
MEMBERS — These Manufacturers assure top quality engineered grating.

IRVING SUBWAY GRATING CO., INC. Long Island City, N. Y.
THE TRI-LOK COMPANY Pittsburgh, Pa.
STANDARD STEEL SPRING CO. Gary, Indiana
BLAW-KNOX COMPANY Pittsburgh, Pa.
WALTER BATES COMPANY, INC. Joliet, Illinois
BORDEN METAL PRODUCTS CO. Elizabeth, N. J.
HENDRICK MANUFACTURING CO., Carbondale, Pa.

BREVITY—Identify by IEN - 8887 if you write the maker

GRINDING . . Profile machine for use on jet compressor blades

Source: EX-CELL-O CORP. 1202 Oakman Blvd., Detroit 32, Mich.



Style 87 profile grinder is a companion machine to the company's profile milling unit Style 86, previously described IEN-8282-51. Both machines are the same construction with the work mounted above the wheel or cutter spindle. Location is from the finished root form at one end and a center at the other end. Roller-type backrests steady the blade. The machine grinds the complete airfoil form including leading and trailing edges.

The work moves lengthwise across the grinding wheel at an adjustable rate of feed and is rotated at the same time. Accuracy of the form is maintained by the use of master cams, which are made directly from the engineer's master layout. The machine is equipped with a coolant pump and automatic controls to start and stop coolant flow. A two-speed work drive motor slows down while the grinding wheel is cutting the broad side of the blade. It speeds up while the narrow edges are being ground.

The grinding wheel is dressed with a hand-operated swivel-type diamond cutter. The amount of stock dressed off is compensated for by the wheel moving toward the work an equal amount. The operator loads a work piece and then presses a start-cycle button as he does on the milling machine. From this point on the operation is automatic.

BREVITY—Identify by IEN - 8888 if you write the maker

CONTROL . . Voltage regulator, single phase, to 600 volts, 1000 amps.

Source: GENERAL ELECTRIC CO. Dept. 6X-201, Schenectady 5, N. Y.

New design of the company's Inductrol dry-type induction voltage regulator is available for single-phase circuits to 600 volts and to 1,000 amperes. Standard ratings are 9.5 to 24 kva. The unit can be employed for secondary circuit regulation where lighting and power are supplied from same lines.

Application can be made in laboratories to control voltage in calibrating and test meters, instruments, instrument transformers, for operating resistance and induction furnaces.

Construction includes a rotor-mounted shunt winding and a stator-mounted series winding arranged so varying the position of the rotor with respect to the stator causes variation of voltage in the series winding. This will raise or lower the output voltage gradually as required by change in load.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8889 if you write the maker

Type 71-A VARIAC Transformer $18.50

a new Low-Voltage Variac

The new Type 71-A VARIAC Transformer is a very convenient source of low-voltage a.c., continuously adjustable from zero to 16 volts, open circuit. It is rated at 5 amperes at 13 volts output, continuous duty.

This new transformer is of the VARIAC type, with a completely isolated secondary winding. The slider track is calibrated in open-circuit voltage. The limited voltage range makes this transformer particularly safe for experimental work; the isolated secondary permits its use in floating circuits; the continuous adjustment is convenient in compensating for voltage fluctuation, or in determining performance over a variable voltage range.

The unit is 5½ inches long, 3⅝ inches wide and 3¼ inches high. Its net weight is 4 pounds.

Write for a copy of the new VARIAC Bulletin. Just off the Press

GENERAL RADIO Company 275 Massachusetts Ave. Cambridge 39, Mass. 90 West St. NEW YORK 6 920 South Michigan Ave. CHICAGO 5 1000 North Seward St. LOS ANGELES 38

BREVITY—Identify by IEN - 8890 if you write the maker

LET ROBINSON DESIGN YOUR FORCED DRAFT FAN!

ROBINSON

FORCED DRAFT FAN

ROBINSON VENTILATING COMPANY
ZELIENOPLE, PENNA.

Designed to meet your specifications as to volume and pressure . . . High efficiency . . . Saves money in power cost during long service.
Let us select and design a Robinson unit for you.
For supply combustion air to Boilers . . . Open Hearth Furnaces . . . Reheat Furnaces . . . Heat Treating Furnaces . . . etc.

WRITE TODAY FOR BULLETIN No. 2101.

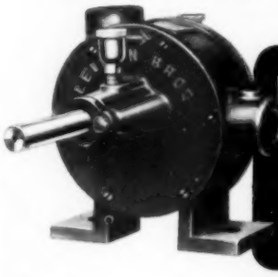
MAKERS OF FANS AND VENTILATING EQUIPMENT FOR FIFTY YEARS

BREVITY—Identify by IEN - 8891 if you write the maker

All these are "LOW PRESSURE" AIR JOBS--

Agitating—blowing—holding—chucking—sorting—cleaning—drying—cooling—separating—mixing—feeding—leak-testing—pressure-boosting—materials transfer, etc.

-handled Better, at Lower Cost, with



LEIMAN AIR PUMPS (Pressure, Vacuum, Suction)

ON hundreds of air applications requiring pressures lower than 25 p.s.i. or vacuum under 29" mercury, Leiman Rotary Positive Air Pumps are providing these advantages over any other source of air:

- Even, pulseless flow of air.
- No expensive installation, no tanks.
- Air available instantly—no waiting to build up pressure.
- No waste — runs only when air is needed.
- Very compact and portable—plug in and use anywhere.
- Provides both pressure and vacuum-suction from same source, by switching from outlet to inlet.
- Extremely quiet and trouble-free for years.
- Little or no maintenance.

What is your operation or problem? Send us details for recommendation, without obligation.

TAKE UP THEIR OWN WEAR

Exclusive Leiman hinged wing design permits wings to wear uniformly, maintaining full pressure or vacuum, even after 15 and 20 years' steady service.

WRITE on firm letterhead for free catalog and application folder.

LEIMAN BROS., Inc. 166 Christie Street, Newark 5, N. J.

AIR PUMPS - AIR MOTORS - SAND BLASTS - DUST COLLECTORS

BREVITY—Identify by IEN - 8893 if you write the maker

A steel hand hoist with compact, adjustable suspension and trolley

LONGER-LIFE FEATURES

- Steel in all load-supporting parts
- Load sheaves with five formed pockets
- Alloy Steel load chain
- Swiveling drop-forged load hook
- Alloy steel, machine cut gears
- Fully enclosed, self-oiling gear case

Write for Bulletin DH-269

ACCO York, Pa., Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.

WRIGHT HOIST DIVISION
AMERICAN CHAIN & CABLE
In Business for Your Safety

BREVITY—Identify by IEN - 8894 if you write the maker

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE — LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Be sure to write for illustrated literature and prices.

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

BREVITY—Identify by IEN - 8896 if you write the maker

CUTTING . . Abrasive disc machine for concrete, composition materials

Source: MARTIN FIREPROOFING CORP.
P. O. Box 27, Kenmore Station, Buffalo 17, N. Y.

Engine drive is now available in addition to the motor drive for the company's Creeper concrete cutting machine, previously described IEN-9884-50. The machine applies in removing broken, worn or unwanted sections of a concrete floor or to provide access through the floor to buried lines for repair purposes.

The spindle takes a 14-in. abrasive disc with depth capacity to 5 in. when new. The head rides in a channel frame that is positioned on the ground and is equipped with wheels at one end to assist in moving or repositioning. A water hose attachment is included for wet operation when this is desired.

BREVITY—Identify by IEN - 8897 if you write the maker

PAINTING . . Rubber base coatings for product finishing, plant maintenance

Source: CASEY & CASE COATING CO.
7222 E. Slauson, Los Angeles 22, Calif.

General data in 12 page bulletin

Copolymer resins, modifiers, plasticizers and pigments are employed in a new line of synthetic rubber-base paints. The paints are available for general equipment finishing and in building and floor maintenance. Application can be made on metal, concrete, stucco, brick, stone. The protected surface is particularly resistant to chemical spillage, to fungus and mildew growth and to impact and abrasion.

The paint will stand up in temperatures to 400 deg. F. A gallon will coat from 300 to 450 sq. ft. of surface. Drying takes place in about four hours after application. Standard colors are white, cream, gray, green and oxide red. Additional colors are available if maximum chemical resistance is not a factor.

BREVITY—Identify by IEN - 8898 if you write the maker

FASTENING . . Toothed steel ring makes invisible connection in wood

Source: METAL INDUSTRIES INC.
183-187 N. 4-Mile Run Road, Youngstown 9, Ohio

Burr-Lock is a new steel ring to be pressed or driven into materials such as wood to make assemblies in which the fastening does not show. It is available in three sizes measuring ½, 1 and 1½ in. in diameter. Height is approximately $\frac{1}{16}$ inch. It can be used alone or in connection with nailed joints in which case it will strengthen such a joint by about 50 percent.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8899 if you write the maker

MERRILL MATERIALS HANDLING DEVICES

MERRILL BROTHERS

56-14 ARNOLD AVE., MASPETH, N. Y.

BREVITY—Identify by IEN - 8900 if you write the maker

For melted compounds you count in hundreds of gallons or in drops, you'll find that Sta-Warm assures you of low overall compound melting cost, because . . .

1. Every Sta-Warm heater is engineered to provide broad, even "low-wattage" heat distribution . . . not spotty or highly concentrated heat.
2. Every Sta-Warm heater, large or small, may be tailored to fit your particular compound melting application.

Ask Sta-Warm for recommendations on your current compound melting problem. *No obligation.*

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

BREVITY—Identify by IEN - 8901 if you write the maker

CUT — Choose the right blade for any job from the complete line of STARRETT hand and power hacksaw blades. They cut quicker, last longer.

SAW — STARRETT Band Saws for cutting metal, wood, plastics. Furnished in coils in new handy reel dispenser or cut to length and welded.

SLICE — For soft or fibrous materials. Available in a complete range of sizes in straight-edge, scallop-edge or wavy-edge types—single or double bevel.

FASTER, BETTER WITH

Starrett

HACKSAWS · BAND SAWS

BAND KNIVES

VALUABLE INFORMATION

Starrett Hacksaw and Band Saw Catalog gives cost, performance and application data for the complete line of hacksaws, band saws and band knives.

Starrett Quick-Reference Metal Cutting Guide instantly gives complete information for cutting any metal by hacksaw or band saw.

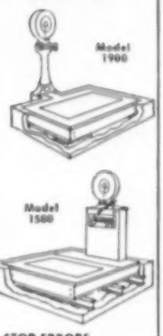
Starrett — THE L. S. STARRETT COMPANY · ATHOL, MASS., U.S.A.

BUY THROUGH YOUR DISTRIBUTOR

BREVITY—Identify by IEN - 8902 if you write the maker

TOLEDO FLOOR SCALES

help you Save Time . . . CUT COSTS!



Toledo Floor Scales are speedy, accurate, dependable . . . provide vital cost-data on materials and products in receiving, shipping and processing. Double parallel link platform suspension assures long life, dependable accuracy. Model 1900 for medium capacities. Model 1500 for capacities to 6500 lb. Write for bulletin 2410. Toledo Scale Company, Toledo 1, Ohio.

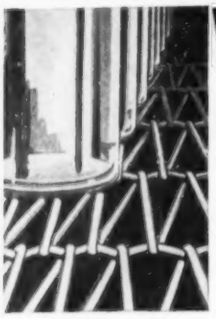
STOP ERRORS

Toledo Printweigh provides printed weight records . . . available on all types of Toledo Dial Scales . . . assures you that accurate indication of the Toledo dial will reach your accounting records without chance of human error.

TOLEDO

HEADQUARTERS FOR SCALES

BREVITY—Identify by IEN - 8903 if you write the maker



WISSCO BELTS

assure trouble-free production schedules

Present-day demands for maximum production call for equipment that can be counted on to stand up and deliver dependable, uninterrupted service—particularly where punishing conditions are encountered.

Wissco Metal Processing Belts are specially engineered in various metals and alloys for long-lasting resistance to abrasion, corrosion and temperature extremes.

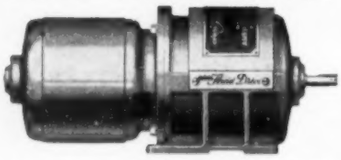
For additional information write or phone our nearest sales office.

THE COLORADO FUEL & IRON CORPORATION—Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Clinton, Massachusetts

WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL & IRON CORPORATION
CFI

BREVITY—Identify by IEN - 8904 if you write the maker

FREE TRIAL OFFER



At no cost or obligation to you, we invite you to try an American Blower Type TM Gyrol Fluid Drive in actual production on your own machines.

We want you to see for yourself how these remarkable units save power, provide smooth acceleration, and absorb shocks.

To take advantage of this offer, write us direct. Describe the machine on which you want to use the TM unit, give horsepower of present motor. Then, we'll contact you to arrange installation and trial period.

AMERICAN BLOWER

American Blower Corporation, Detroit 32, Michigan
Division of American Radiator & Standard Sanitary Corporation

Serving home and industry . AMERICAN-STANDARD • AMERICAN BLOWER
CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • BOSS HEATER • TONAWANDA IRON

BREVITY—Identify by IEN - 8905 if you write the maker

But water, steam, or oil discs are all the same to him. He wonders if the cold water disc will hold on this steam line. Just stick around for the answer.

Send for free book on valve ... installation tips

Ohio Brass VALVES
MANSFIELD ... OHIO

BREVITY—Identify by IEN - 8906 if you write the maker

DRIVE . . Variable speed unit, base, countershaft, V-belt sheaves

Source: SPEED SELECTOR INC.
118-A Noble Court, Cleveland 13, Ohio

Countershaft is mounted in a bracket in sealed ball bearings in this new Speed-Selector drive. The bracket mounts two rigid slide rods with a second base bracket at their outer ends. The rods carry cross brackets to take a motor in any NEMA size to No. 326. A spring-backed variable-pitch sheave mounts on the motor shaft, double in the unit illustrated, and a corresponding sheave with an adjusting handwheel mounts on countershaft.

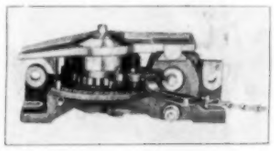
The motor brackets are secured to the slide rod so they cannot move and variations in speed in an 8 to 1 range is by turning the handwheel. The user supplies the motor and also the sheave which mounts on the output end of the countershaft. The drive rates 2 to 15 horsepower.

In addition to the assembly shown the countershaft and bracket unit can be detached from the slide bars and set up separately with the user's motor mounted on the bars and equipped with a spring-backed sheave. Then the handwheel adjustment moves the motor forward and back for a speed-change ratio of 4 to 1. This same arrangement of solid sheave on the countershaft and spring-backed variable-pitch sheave on the motor can be employed with the countershaft secured to the slide rod. The output end of the countershaft can be equipped with a second adjustable-pitch sheave assembly to drive a spring-backed variable-pitch sheave for an overall ratio of 64 to 1 in the power range named.

BREVITY—Identify by IEN - 8907 if you write the maker

INDEXING . . Rotary work table, collet chuck rates to 1 in. rounds

Source: J. W. DEARBORN
70 S. Cliff St., Ansonia, Conn.

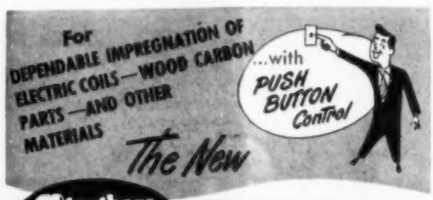


Model H is new design in the company's line of chucking and indexing fixtures, previously IEN-8131-47. The new unit takes round work to 1 in. in diameter, square work to ¾ inch. Other shapes and oversize parts can be held by using special collets. In each case the collet opens positively to eliminate chance of sticking. Indexing is by pull on a chain that can be attached to a stationary part of a milling machine so the table movement also performs the indexing operation.

Index positions range from 1 to 24 as compared with 1 to 12 in the previous design. Work is automatically ejected from the collet after the last cut by short additional movement of the machine table. In addition to the plain ratchet design, a degree-indexing mechanism can be specified to position work to any odd angle.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

BREVITY—Identify by IEN - 8908 if you write the maker



Struthers Wells IMPREGNATOR

The new Struthers Wells impregnator provides simplified, dependable impregnation of a wide variety of materials. The tank cover can be opened in seconds without manual effort. Furnished in complete units as shown or principal parts only can be specified if desired. The new unit is for use by heating with steam, electricity, Dowtherm, or for non-heated operations. • Heating Systems are supplied if required.

Write today for Bulletin B-30

STRUTHERS WELLS CORPORATION
WARREN, PA.
Plants at WARREN, PA. and TITUSVILLE, PA.
OFFICES IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 8909 if you write the maker

● Put HERC-ALLOY Steel Chain on the toughest job you can find. Let HERC-ALLOY service-experience records give you first hand, the undeniable answers in black and white.

Production executives and safety directors who have used HERC-ALLOY for slings or other applications agree they have yet to find an alloy steel chain superior to HERC-ALLOY.

COLUMBUS McKINNON
CHAIN CORPORATION

(Affiliated with Chisholm-Moore Hoist Corporation)
GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.
SALES OFFICES: NEW YORK • CHICAGO • CLEVELAND • SAN FRANCISCO
Other Factories at Angola, New York, St Catharines, Ontario and Johannesburg, S. A.

BREVITY—Identify by IEN - 8910 if you write the maker

Spincraft
SKILL WILL DO IT

Production Methods Help You Gain Months of Time

Costs are *much lower*, too

Whenever emphasis is on speed in delivery, or lower costs, consider Spincraft metal fabricating. Of all the methods available for cold shaping flat or rolled sheet metals, the spinning lathe, plus special Spincraft forming skills, offers the fastest and least expensive means of getting production rolling. As an example, consider the parts and assembly for the water sterilizer unit illustrated here. From a scratch start Spincraft made the required tools, produced the components and assembly and began delivery ten days after receipt of the order. Months of time were gained, thousands of dollars saved.

Cases like this are everyday experiences at Spincraft—on both small and large runs. The answer you want cannot be guaranteed, but others have been helped so often and so well that Spincraft has become the world's largest metal spinning and fabricating plant. Call or write

Components for stainless steel water sterilizer — spun, fabricated and assembled in record time at lowest cost.

The function, scope, mechanics and economics of Spincraft metal spinning and fabricating are discussed in this stimulating 40-page, well-illustrated booklet. A copy is yours for the asking.

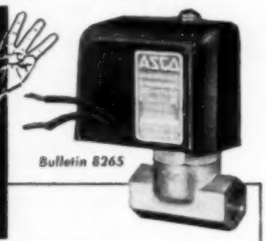
Spincraft
SKILL WILL DO IT
INCORPORATED

4153 W. STATE ST.
MILWAUKEE 8, WIS.

Heretofore known as Milwaukee Metal Spinning Co.

BREVITY—Identify by IEN - 8912 If you write the maker

3 Sturdy SMALL Shut-off Valves for EXTRA HEAVY Duty



Bulletin 8265 . . for air, water, light oil, refrigerants and other liquids and gases up to 250 psi; for steam up to 175 psi; Factory Mutal and Underwriters' approved; ⅜" pipe size; ⅛" to ¼" port size.

Bulletin 8268 . . Similar but designed to handle a greater variety of materials up to 475 psi; heavy fuel oil up to 200 psi; ⅜" and ½" pipe size; ⅛" to ⅜" port size.

Bulletin 8271 . . for steam and other non-corrosive liquids and gases at high temperatures (212° F. to 450° F.); ⅜" and ½" pipe size; 3/16" to ⅜" port size.

Those ASCO Valves are packless, thus eliminating stuffing box maintenance. Modified types of this series include valves that "open" rather than close on de-energizing . . . adjustable main flow and by-pass flow valves . . . and explosion-proof valves. All are described in detail in our catalog section 6-V. Write for your copy.

Automatic Switch Co.
303 Lakeside Avenue Orange, New Jersey
When in need of Automatic Transfer Switches, Remote Control Switches, Contactors, Relays, and Specialized Electromagnetic Controls, come to us.

BREVITY—Identify by IEN - 8913 If you write the maker

NEW a low-cost whiteprinter

BRUNING'S COPYFLEX "20"

Here's the new Bruning Model 20 Copyflex. Because of its low price, thousands of companies now can make their own whiteprints and thus realize a substantial saving. Now you can produce your whiteprints *when* you want them, as you want them.

It will pay for itself by producing sharp, clean prints of your engineering drawings as well as copying your production orders, reports, specifications, defense order copies, etc.

The Model 20 is a completely new, medium volume machine of advanced design, yet sells for the lowest price of any machine in its class. It has a full 46" printing width, and takes cut sheets or roll stock.

Compare these advantages

- **LOWEST PRICED** machine of its class available.
- **NO FUMES.** Bruning Copyflex machines use no vapor developer therefore cannot emit unpleasant fumes.
- **NO INSTALLATION.** No exhausts needed. Just connect to an ordinary 115 volt AC electric power circuit.
- **EASY OPERATION.** No training needed — anyone can operate a Copyflex.

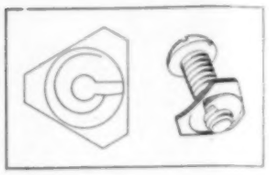
See how the Model 20 Copyflex (or one of our five other models) can help you. Write today for free descriptive literature.

BRUNING
Specialists in copying since 1897
CHARLES BRUNING COMPANY, INC.
Dept. H-91 100 Reade St. New York 13, N. Y.

BREVITY—Identify by IEN - 8915 If you write the maker

FASTENING . . Spring steel nut locks into thread root when tightened

Source: WALDES KOHINOOR INC.
47-18 Austel Place, Long Island City 1, N. Y.



Series 5300 is recent addition to the company's line of Truarc retaining rings, previously described IEN-3010-49. It is made with a drawn helical segment and tapered inner edge that forms a single thread and engages approximately 300 deg. of the circumference of a screw thread. The dished triangular body flattens when it is tightened down to lock in the thread root and hold securely under impact or vibration.

Six sizes range from 0-32 to ¼ in. 28 with thickness at 0.013 or 0.018 in. in sizes below ¼ inch. Clearance diameter is 0.462 to 0.710 inch. Details in 8-page Bulletin No. 5.

BREVITY—Identify by IEN - 8916 If you write the maker

ROT PROOFING . . Powdered chemical for application on wood and textiles

Source: PENNSYLVANIA SALT MFG. CO.
1002 Widener Bldg., Philadelphia 7, Pa.

Available for evaluation

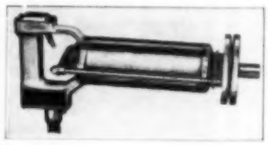
New **formulation** of the copper ammonium fluoride, previously developed by the company in liquid form, IEN-6732-44, is now available as a free-flowing powder soluble in water. It shows excellent penetrating characteristics when dissolved in water and diluted to 0.5 per cent copper to treat wood. The dry material is an improvement over the liquid solution in ability to make dilution as low as 0.04 per cent copper without need to add ammonium hydroxide.

Wood can be sprayed, soaked, brushed or pressure impregnated. Textiles can be soaked or padded. Treatment can follow vat, mineral or sulphur dyeing, according to Specification JAN-D-504 which lists the chemical as a suitable after-treatment for duck and twill.

BREVITY—Identify by IEN - 8917 If you write the maker

ROCK DRILLING . . Electric hammer for holes to 1½ in. in concrete

Source: SYNTRON CO.
410 Lexington Ave., Homer City, Pa.

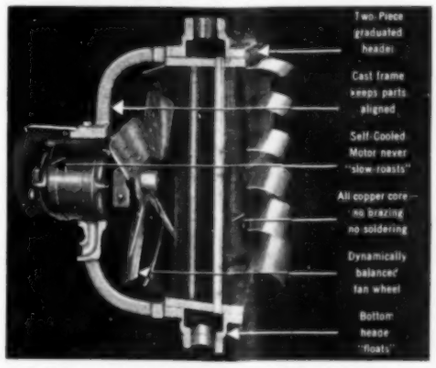


Model 17-RO is a new size in the company's line of self-rotating electric hammer drills for which a smaller ⅝-in. drill was previously described IEN - 1191 - 51. The new unit weighs 21½ lb. and is intended for general maintenance and construction uses. It is equipped with a 15-ft. cable and plug for connection into a 110-volt 60-cycle ac. circuit, 220 volts or 25 cycles when specified. Operation is at 3,600 blows per minute. Control is by a trigger switch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8918 If you write the maker

ONLY ILG UNIT HEATERS offer you *ALL* these advantages!



Send inquiry card or phone nearby Branch Office (consult classified directory) for complete specifications on the finest units heaters you can install. *Save with ILG!* Ilg Electric Ventilating Co., 2812 N. Crawford Ave., Chicago 41, Ill. Offices in more than 40 Principal Cities.

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Get FREE Brochure!
UNIT HEATERS
Steam • Hot Water • Electric • Gas-Fired

BREVITY—Identify by IEN - 8919 If you write the maker

For Accurate Temperature Control in Military and Civilian Products . . .

USE KLIXON Thermo-Snap CONTROLS

The positive snap action of Klixon Thermo-Snap Controls provides *a quick, clean break* or *a fast, solid make* assuring dependable, accurate temperature control wherever used . . . and usually at a cost lower than general purpose controls.

Today, Klixon *Thermo-Snap* Controls are used in many military and civilian products ranging from tanks, airplanes, radio and electronic equipment, sterilizers and unit heaters to household electrical appliances, dairy heaters, etc. Applications include — low limit and high limit controls, fuel delay switches, purges switches, temperature controls, fan switches, tube and rectifier cooling control, etc.

Klixon *Thermo-Snap* Controls are available in many hermetically sealed and open types in a wide variety of operating temperature ranges. Our engineers will gladly help you with your problems. Write for information.

KLIXON SPENCER THERMOSTAT
Division of Metals & Controls Corp.
209 Forest St., Attleboro, Mass.

BREVITY—Identify by IEN - 8920 If you write the maker

NEW MACHINE LEVELING DEVICE

Where anchor bolts are used, this new Empco Jack Style JS will save considerable time in setting and keeping equipment level.

Tested to support 20 tons and lift 8,000 lbs., this Empco Jack is the answer to any machine installations. Anchor bolt hole through the jack assembly allows clearance for ¾" diameter bolt. This permits the Empco Style JS Jack to be used at the precise spot where equipment was designed to be best supported.

Available in three sizes: 1¼", 2", and 3" (minimum heights) with VI-SORB mounting pads as optional equipment.

Write for specifications and prices of the complete line of Empco Leveling Jacks today.

EMPCO PRODUCTS
THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

BREVITY—Identify by IEN - 8921 If you write the maker

NEW GRINDER SAFETY with GREATER POWER

INGERSOLL-RAND *introduces* **ANOTHER BIG FIRST**

the **NEW** *overspeed* **SAFETY COUPLING**

The Overspeed Safety Coupling supplements, and is completely independent of, the regular factory-set weight type governor used in Ingersoll-Rand Air Tools.

This built-in unit, which operates in case of failure of the regular governor, eliminates the possibility of dangerous overspeed operation. If, for any reason, the motor speed exceeds the safe wheel speed, the NEW Overspeed Safety Coupling automatically uncouples the arbor and the wheel from the motor, making it impossible to operate the Grinder until the cause of overspeeding has been corrected.

GRINDER OPERATORS *Also Asked for* THESE *Extra* FEATURES

- Long Life Arbor Construction
- 20% More Power
- Quieter Exhaust
- Extra Exhaust Positions
- Rubber-Faced Valve
- Optional Handle

Call us today and arrange for a demonstration of this powerful new Series 4 Air Grinder.

665-8

Ingersoll-Rand
11 BROADWAY, NEW YORK 4, N. Y.

BREVITY—Identify by IEN - 8922 if you write the maker

CUT YOUR COSTS ON REPEATING-PROCESSES

Use General Electric Process Timers For Increased Efficiency, Big Savings

TYPE TSA-14 PROCESS TIMER
Used for circuits requiring repeating ON-OFF control

WHERE YOU HAVE PROCESSES or machines which operate on repetitive cycles, depend on the G-E Type TSA-14 process timer for automatic on-off control. Here are three important ways you benefit:

1. Reduce waste.
2. Assure uniform operation.
3. Cut production costs by freeing workers to handle other jobs.

TSA-14 TIMER with timing cycles from 10 seconds to 8 hours can be used for control of pumps, agitators, mixing valves, blowers, exhaust fans, ovens, filter cleaning, and many other applications.

WEATHER-RESISTANT CASE safely houses the time-proved Telechron* motor which is designed to give you years of accurate operation. Low installation and maintenance costs further increase your savings.

Order from your local G-E representative. Or write for Bulletin GEC-525, Section 603-119, General Electric, Schenectady 5, N. Y.

*Registered Trade Mark, Telechron, Inc.

GEA-9119

GENERAL ELECTRIC

BREVITY—Identify by IEN - 8923 if you write the maker

INCREASES TAP LIFE

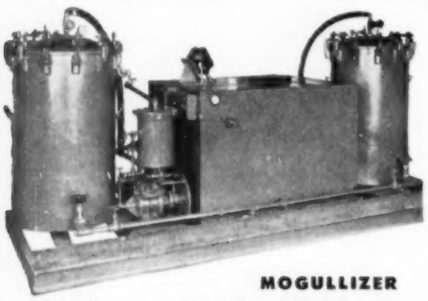
by Guided Accuracy

Quickly pays for itself on small-lot tapping operations. Insures accurately tapped holes, increases work output—practically eliminates tap breakage and removal. Has slotted base for fixtures. Special steel machined parts. Long spindle bearing provides accurate alignment and long life. Four hardened collets, furnished, handles standard tap shank sizes from No. 0 through ¼". Either right or left hand taps may be used. Finished in machine-tool gray. Write for circular.

$20.50 POSTPAID

H. D. HERDER TOOL SPECIALTIES
2734 E. MICHIGAN AVE.
KALAMAZOO, MICH.

BREVITY—Identify by IEN - 8924 if you write the maker



MOGULLIZER

Eliminates Leaky Castings

If your contract calls for impregnation, or if your production castings leak or weep and will not hold pressure, investigate our Mogullizing system—a high vacuum and pressure method of sealing castings. Models to meet your requirements.

Any standard impregnating material can be used but for top efficiency we recommend our Mogul Cast Seal.

Prompt deliveries.

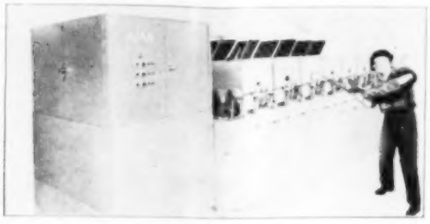
Write today for full details on the Mogullizing system.

METALLIZING COMPANY OF AMERICA
3520 W. Carroll Avenue • Chicago 24, Ill.

BREVITY—Identify by IEN - 8925 if you write the maker

HEATING . . Induction equipment assembles 8 stations for steel bar

Source: AJAX ELECTROTHERMIC CORP.
34 Ajax Park, Trenton 5, N. J.



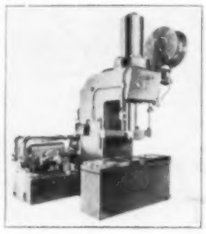
Power rating is to 1,500 kw. for 3,000-cycle output in this new multiple-station induction-type forge-heating equipment. Each of the 8 stations can be used to heat billets, either round or square, measuring 1 to 4 inches. The billets are heated to 2,250 deg. F. at a maximum rate to 8,500 lb. per hour.

Each station mounts two induction coils in series for operation in continuous bar heating. Or the back heater can be de-energized and the front coil used for end heating in which case the operator moves the bar manually in step with signal lights advising him when to make each move. Each station has its own transformer, capacitors, pushbuttons, signal lights, timers, protective relay, and hydraulic feeding devices when the station is to be used for continuous heating.

BREVITY—Identify by IEN - 8926 if you write the maker

PRESS . . 200 ton hydraulic to straighten 2⅜ to 10¾ in. pipe

Source: OILGEAR CO.
1567-A W. Pierce St., Milwaukee 4, Wis.



New press mounts a ram with a nose measuring 12 by 16 in. and a table 72 in. in length to take straightening anvils. It is for use on pipe and tube measuring 2⅜ to 10¾ in. in outside diameter and having yield strength to 125,000 lb. per square inch. Control centers at pushbuttons at the front of the housing. Power is supplied by the company's Type DX-15025 two-way variable-delivery pump and a 125-hp. motor.

Operation is to 30 cycles per min. at ½ tonnage and to 21 cycles at full tonnage when the press is set for 4-in. ram travel. Stroke is to 20 inches. Maximum distance, table to nose, is 35¼ inches. Throat dimension is 12 inches. Table height is 36 in. above the floor. Floor space measures 128 by 112 inches. Maximum ram speed down at full tonnage is 188 ipm. It is 393 ipm. at half tonnage. Maximum speed up is 362 ipm. The assembly weighs 37,100 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
Product names and functions are indexed, page 114

BREVITY—Identify by IEN - 8927 if you write the maker

To Improve Production, End Dust Health Hazard Reduce Rejects and Maintenance Costs

HOFFMAN HEAVY DUTY VACUUM CLEANING

Bigger Capacity—Higher Vacuum

Now Available in 5 Sizes of Improved Portables. Stationary Systems in a Complete Range of Sizes. Write for New Bulletins A-814 and A-816.

AIR APPLIANCE DIVISION

U.S. HOFFMAN MACHINERY CORPORATION
103 Fourth Ave., New York 3, N. Y.
Canadian Plant, Canadian Hoffman, Newmarket, Ont.

BREVITY—Identify by IEN - 8928 if you write the maker

MARKEM®

marks them all

FROM ARTILLERY SHELLS TO MEDICAL AMPULES

MASTERS OF MARKING — Since 1911

Markem methods, machines, type and inks have been marking the products of industry for forty years. Markem machines can mark up to many thousands of pieces per hour. They make clear, durable imprints on flat, curved or irregular surfaces of paint, paper, wood, glass, metal, leather, plastic, rubber, fabric, composition and pressure sensitive tapes. No special skill is needed for their operation. Legend and color of imprint may be quickly and easily changed.

MAKE YOUR MARK WITH MARKEM

When your products need marking for Identification, Control or Market — ask Markem. Submit your problem, together with a sample of the item to be marked. Markem Machine Company, Keene 2, New Hampshire.

MARKEM BETTER MARKING SINCE 1911

BREVITY—Identify by IEN - 8929 if you write the maker

ALLEGHENY STEELBAND COMPANY

STEELBAND

Leads the Band

Now is the time to order Allegheny STEELBAND strapping, seals, tools, and accessories to insure your present and future needs. Our company is rapidly expanding to meet the growing demand for our products.

ALLEGHENY STEELBAND CO.
Box 716, Pittsburgh 30, Pa.
(WAInut 1-7100)

STRAPPING AND SEALS | STEELBAND | **ACCESSORIES AND TOOLS**

BREVITY—Identify by IEN - 8930 if you write the maker

A *BETTER* ENGRAVER At *LOWER* COST

The 2 & 3-Dimensional

MICO

Fills the long-felt need for a portable, inexpensive and dependably accurate machine for making small dies, molds, templates, etc. Extremely simple to operate.

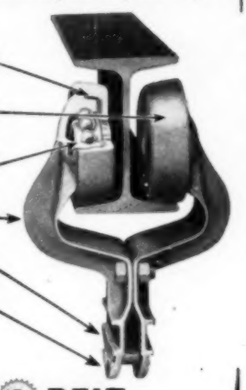
- Engraves 2 or 3 dimensions.
- Pantograph permits 4 reduction ratios.
- Micrometric depth control graduated in thousandths of an inch.
- Entire spindle assembly removable to facilitate cutter grinding.
- Rugged cast iron construction with exclusive adjustments for insuring quick, accurate setting.

Send for complete specifications and attractive price list

MICO INSTRUMENT COMPANY
81 TROWBRIDGE STREET, CAMBRIDGE, MASS.

BREVITY—Identify by IEN - 8931 if you write the maker

Important points to look for when you buy trolleys
You get them all when you buy Link-Belt



Effective sealing of wheel and bracket keeps out dust and dirt, yet wheels turn freely.

Wheels are drop-forged, internally machined to extremely close tolerances.

Raceways are induction hardened. High load capacity is based on entire assembly — not just on bearing.

Rugged, one-piece bracket and clevis are drop-forged and heat-treated—fewer parts to maintain.

Trolley can replace other makes without disturbing chain's operating position.

Clevis pins are locked in bracket, cannot rotate. Bracket wear is minimized.

Write for Folder 2241-B.

LINK-BELT

LINK-BELT COMPANY: Chicago 8, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8. 12,304

BREVITY—Identify by IEN - 8932 if you write the maker

What's U.S. Rubber doing with Plastic Pipe?

Giving it extremely high impact strength, for one thing. A single .44 cal. revolver bullet, fired at a distance of 20 yards, merely dented this piece of pipe, which is made of U.S. Rubber's new plastic, Uscolite. This amazingly strong, lightweight, versatile piping is easy to handle, won't break if dropped. Furnished in standard lengths, it can be cut to length and threaded on the job. Uscolite is resistant to most chemicals. For more information, write to address below. In Canada, write to the Dominion Rubber Company.

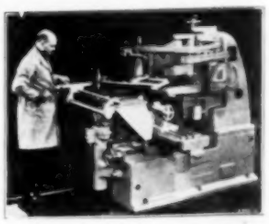
PRODUCT OF U.S. RUBBER SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.

BREVITY—Identify by IEN - 8934 if you write the maker

ENGRAVING . . Pantograph machine produces designs in cylindrical rolls

Source: GEORGE GORTON MACHINE CO.
1808 Racine St., Racine, Wis.



Blank rolls made of cast iron, steel, nonferrous metal or plastic and measuring from 6 to 12 in. in diameter and to 40 in. in length mount between centers in this new machine and connect at one end to the headstock drive. Movement of the tracer forward and back on the flat master pattern at the front of the machine is accompanied by corresponding rotation of the roll so the cutter point remains centered over the roll axis as a design is produced. Movement of the tracer from left to right follows the master without roll rotation.

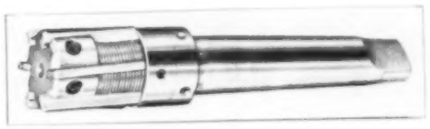
The master is cut in flat brass, sheet iron, zinc or sheet plastic in either sunk or relief form and twice the size that is to be produced on the roll. Maximum area covered by the cutter at one setting is 5 by 20 inches. Repeat settings can be made on a small segment or section when a given design is to be repeated around the roll. A built-in manual scanning attachment consisting of longitudinal and transverse feed screws carries the tracer over the master and provides positive feed control of the routing operation. A feature of the new machine is the fact that no gearing is required in the control movements.

The cutter spindle is driven by a ½-hp. variable-speed dc. motor for speeds between 500 and 12,000 rpm. in stepless adjustment. The machine weighs 10,650 lb. and occupies a floor space measuring 80 by 87 inches.

BREVITY—Identify by IEN - 8935 if you write the maker

REAMING . . Adjustable tool, high speed and carbide tipped designs

Source: WAUKESHA TOOL CO.
1423 Arcadian Ave., Waukesha, Wis.



A short shank characterizes this new adjustable expansion reamer. It has been designed for use in screw machines, drilling machines, turret lathes, particularly for short holes and where space between the work and the tool holder is limited. The smallest ⅝-in. unit can be expanded through 0.044 inch. The largest 3¼-in. tool expands through 0.130 inch. Overall length is 4¾ to 10½ inches.

The blades can be supplied in high-speed steel or in carbide-tipped design. They are normally angled to the left for right-hand cutting but can be angled to the right when specified. Straight or tapered shanks are available.

Catalog, "Quality Cutting Tools", 24 pages, presents illustrated description, specifications and prices on company's reamers, spade drills, tap drivers, boring bars, counterbores.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8936 if you write the maker

DO YOU KNOW... that

You can conserve strategic new materials by using tungsten carbide cutting tools . . .

The efficiency of tungsten carbide cutting tools, measured in work output, is far greater than for any other class of tools . . .

"KNOW HOW"—the best productive use of manpower, machines and materials is essential to our present emergency. It is with this in mind that V-R is making available a fine new text book—CARBIDE CUTTING TOOLS—written by two eminent authorities.

This book removes the veil of highly technical research studies and supplies the men at the machine, the student, the designer and the engineer with a wealth of practical material.

CONTENTS: Machine Tools and the Carbides, Conversion of Carbide Tool Angles, Machinability Tests, Carbide Tool Grinding Single-Point Tools, Cutting Speeds, Feeds, Carbide Tool Design, Inserts and Carbide Tools, Carbide Cutting Tools, Carbide Milling Cutters, Shaving Milling Cutters, Multiple-Edge Carbide Tools, Cutting Speeds, Feeds, Forces, Multiple-Edge Tool Design, Selection of a Carbide Tool, Brazing, Assembly, Grinding and Use of Tools, Glossary, Available Chart Binding.

4th Edition 20 pages. Price $0.50

Company purchase orders will be subject to our regular terms. Non-orders from individuals should be accompanied by check or money order. Please do not send cash because we will not be responsible. All books shipped prepaid.

FREE...With each book purchased for your training program, a complete study guide specially prepared for V-R by the American Technical Society will be furnished without charge—compliments of Vascoloy-Ramet Corporation.

Send all Book Orders to: EDUCATIONAL TRAINING DEPARTMENT

VASCOLOY-RAMET CORPORATION
WAUKEGAN, ILLINOIS

BREVITY—Identify by IEN - 8937 if you write the maker

THIS SYNTRON PARTS FEEDER is feeding checkers . . . all face up . . . single file . . . at a variable rate . . . automatically . . . to a packaging machine. BUT IN YOUR PLANT . . .

SYNTRON

PARTS FEEDERS

Will feed without damage parts of most shapes, sizes and materials to grinders and presses, inspection and packaging devices, and other automatic processing equipment. WRITE for catalog data, or send details of your problem along with sample parts for testing to . . .

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 8938 if you write the maker

NEW WILLSON DUST HOOD

Lightweight and Comfortable

Style No. 2 with No. 46 Respirator. Available without respirator.

- Wide vision acetate window 33 sq. in.
- Windows interchangeable, replaced in a matter of seconds.
- Can be used with any Willson single filter respirators for dusts, mists, gases, vapors.

See your nearest WILLSON distributor or write us direct.
WILLSON PRODUCTS, INC., 217 Washington St., Reading, Pa.
Dependable Products Since 1870

BREVITY—Identify by IEN - 8939 if you write the maker

BOKUM BORING TOOLS are *Designed* for boring

Combined helical (a) and radial (b) backed off cutting form permits reshapening on only one face (c)

STYLE A for general boring

STYLE B for bottoming and facing

STYLE C for internal threading

Design is based on a *mathematical formula* which guarantees correct cutting and clearance angles anywhere around the periphery of cutting head—maintained uniformly within limits of ± few minutes of 1°.

Bokum tools are available in 3 cutting materials: (1) super high speed steel, Cat. N-1139-6; (2) carbide tipped, Cat. N-398; (3) solid carbide, Cat. N-948.

In range of sizes to bore holes from 3/16" dia. up.

To extend further the already long life of Bokum Tools, we recommend the Resharpening Fixture, Cat. N-AB1 and N-AB412. Tool holders, vertical adjustment and fixed position, Cat. N-483.

Because Bokum Boring Tools are designed, they are uniform and remain uniform

BOKUM TOOL CO.
14775 WILDEMERE AVE. • DETROIT 21, MICH.
SINGLE POINT BORING TOOLS—INTERNAL THREADING, BOTTOMING AND FACING TOOLS—CARBIDE TIPPED TOOLS

BREVITY—Identify by IEN - 8940 if you write the maker

CUT SPRAYING COSTS!

By accurately controlling the rate of flow, spray quality, angle and pattern, Delavan nozzles assure the most efficient, economical spraying job.

WRITE FOR

CATALOG NO. 30

DELAVAN MANUFACTURING CO.
3009 SIXTH AVENUE
DES MOINES 13, IOWA

BREVITY—Identify by IEN - 8941 if you write the maker

SAVE MONEY 7 WAYS..

ON PRODUCTION DRILLING!

MEYCO

Carbide Inserted Bushings Are Doing It Daily!

HOW? Like this: (1) Last longer . . . with a life—in most cases—as long as solid carbide bushings at prices that come close to the prices of ordinary steel bushings; (2) Increased life for your drill jigs and fixtures; (3) Increased life for your drills and reamers; (4) Accuracy maintained for a LONG PERIOD of time; (5) Less non-productive machine time, less lost man hours, because bushings need not be changed as often; (6) Inspection time saved, because of greater accuracy for a longer time; and (7) Less waste due to spoilage, for the same reason. Don't pass up a good bet! Get the dope on MEYCO Carbide Inserted Drill Jig Bushings today!

*PATENTED

For information and prices write for Meyco Bushing Catalog No. 18

W. F. MEYERS CO., INC., BEDFORD, INDIANA

BREVITY—Identify by IEN - 8942 if you write the maker

GET THIS FREE BOOK OF FACTS ABOUT GLASS

Saves time in designing and specifying, suggests economical ways of using flat glass in place of other scarce, expensive materials.

Complete specifications, including thicknesses, sizes, weights and physical characteristics of all types of flat glass are tabulated in this condensed, easy-to-read booklet. The information it contains is ideal for users, designers and buyers of glass for all types of industrial applications—sheet glass, polished plate glass, *Electrapane** (electrical conducting glass), *Thermopane** insulating glass, *Tuf-flex** tempered plate glass, safety glass and *Vitrolite** opaque colored glass.

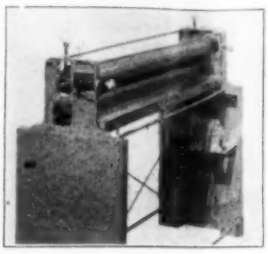
Write for your copy—ask for bulletin SPD—51

LIBBEY·OWENS·FORD GLASS COMPANY
8691 NICHOLAS BLDG.
TOLEDO 3, OHIO

BREVITY—Identify by IEN - 8943 if you write the maker

SPREADING . . Roller coating machine applies paint, lacquer, oil, adhesives

Source: L. R. WALLACE & CO.
438-42 Seaton St., Los Angeles 23, Calif.



Model 51 is a new machine in the company's Walco roller-coater line with drive by a ¼-hp. motor and operating speed at about 64 fpm. to coat one or both sides of flat work to 52 in. in width.

Type C-1 applies a coating roll above the pressure roll in the same vertical plane. It includes a small doctor roll on the infeed side. A reservoir for the material to be coated is formed by the angular space between the rolls. End plates at the roll ends prevent leakage.

Type D-2 has two spreading rolls, one above the other, with an upper doctor roll on the infeed side and a lower doctor roll on the outfeed side. The spreading rolls are covered with Neoprene. Self-aligning ball-bearing take-up adjustments are provided. All of the rolls are in quickly removable assembly.

BREVITY—Identify by IEN - 8944 if you write the maker

ADHESIVE . . Shipping case glue to seal and label paper cartons

Source: PAISLEY PRODUCTS INC.
1772 Canalport Ave., Chicago 16, Ill.

In 5 gal. and 55 gal. drums

Any type of corrugated, jute, fibre or fourdrinier kraft shipping case can be sealed and labeled by hand or machine application of the company's new Boxseal shipping case glue. It is a dextrine-base adhesive, contains no silicate of soda. It can be stored indefinitely without spoiling. It is not injurious to a workers' hands, face or clothing. Containers can be sealed by machine and hand brushing in 20 to 45 seconds.

BREVITY—Identify by IEN - 8945 if you write the maker

GAGE . . Micrometer with rounded anvil for curved surfaces

Source: L. S. STARRETT CO.
100 Starrett St., Athol, Mass.

No. 211 is a new 1-in. micrometer with a rounded anvil for use in measuring wall thicknesses of bearings, tubes, cylinders in diameters starting at ⅝ in. inside. The unit reads in thousandths. Thimble and sleeve carry a rust-resistant satin-chrome finish. A matte-chrome no-glare finish back of the markings makes them stand out clearly to read when illumination is poor. A table of decimal equivalents is stamped on the thimble. The spindle face has a Hi-Micro mirror finish. A sleeve adjustment maintains accuracy.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 8946 if you write the maker

IRON FIREMAN COMMERCIAL GAS BURNERS

LOW COST GAS FIRING for your building or plant

Ideal for quick, low-cost change over

Iron Fireman commercial gas burners are noted for their dependable operation and low gas consumption. These burners, designed particularly for capacities up to 400 boiler horsepower, are very flexible in operation and easily installed—*without costly alterations.*

The Vertical type burner, shown above, provides either manual or automatic control of burner heads in sections. It permits regulation of firing rate in proportion to heat requirements and thereby assures greater fuel economy.

The Iron Fireman Inshot type burner burns with a soft radiant flame. Two impinging jets behind each air port provide greater fuel and air entrainment. A wide range of sizes is available in these and other Iron Fireman gas burners.

Write for complete information and specification charts

IRON FIREMAN
MANUFACTURING COMPANY
3173 WEST 106TH STREET CLEVELAND 11, OHIO

BREVITY—Identify by IEN - 8947 if you write the maker

SELF-LUBRICATING Powdered Bronze Bearings To Your Designs

DUCTILOY powdered-bronze bearings are serving by the millions in sweepers, refrigerators, washing machines, portable electric and pneumatic tools, medium and light industrial equipment.

Use is indicated wherever it is desired to provide bearings that will require virtually no lubrication or service attention — bearings accurate within thousandths, ready to drop or press into position — bearings for radial load or thrust or both, to intricate design if necessary.

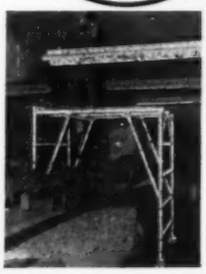
May we quote to your prints
There's no obligation

NATIONAL MOLDED PRODUCTS, INC.
Manufacturers of
SINTRLOY - DUCTILOY - TUBELOY BEARINGS
1945 Mill Street St. Mary's, Pa.

BREVITY—Identify by IEN - 8948 if you write the maker

SAVE up to 70% with Aluminum Alloy "UP-RIGHT" SCAFFOLDS

NEW, FASTER, SAFER WAY TO GET UP IN THE AIR & ROLL WITH THE JOB



Mobile 6', 8' or 10'
SPAN SCAFFOLDS
"The only way to get over looms and spinning frames," reports textile plant manager. Ideal for narrow aisles and cluttered areas in any factory.

30' Mobile
TOWER SCAFFOLD
which took only 18 minutes to erect. A tower of any other height desired can be erected by using the required number of standard 6' or shorter sections. Each one-piece section is easily handled by one man.

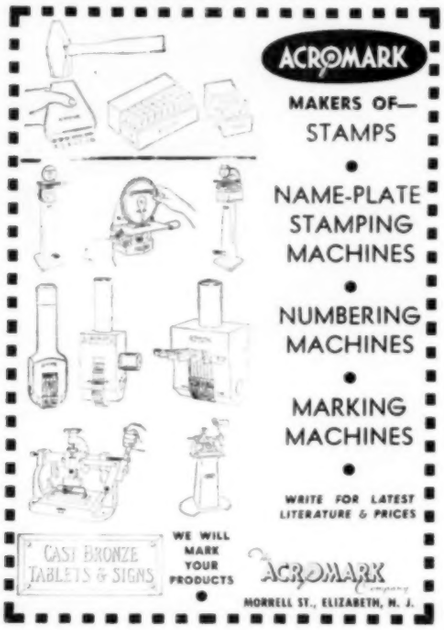
ROLL-AROUND and SAFETY CAGE
Provides new, faster method for covering entire wall areas of tanks. Can be rigged by one man. Roll-Around is anchored to eye-bolt on top of tank. Safety cage is raised or lowered while rolling around.

WRITE FOR DESCRIPTIVE CIRCULAR

"UP-RIGHT" SCAFFOLDS
DEPT. 142 • 1013 PARDEE ST. • BERKELEY, CALIF.
FACTORIES: BERKELEY, CALIF. • TETERBORO, N. J.

• OFFICES IN ALL PRINCIPAL CITIES •

BREVITY—Identify by IEN - 8950 if you write the maker



BREVITY—Identify by IEN - 8951 if you write the maker

Kimpak* Float Packaging

Cuts shipping costs— reduces damage in transit!

Does the product you make get the best possible protection on its way to market? Does your packaging operation move quickly—with minimum demand on labor and material?

A vigorous "yes!" to these questions is answered by the scores of companies that investigated—and changed—to KIMPAK* Float Packaging. For it's the world's most effective shipping protection, at lowest true cost.

KIMPAK creped wadding is a soft, clean, grit-free cushioning material of many thicknesses—as easy to apply as wrapping paper. It comes in rolls or sheets, in dimensions that can be "tailored" to meet your particular requirements or convenience.

Try KIMPAK soon. For further information, see your KIMPAK distributor listed in classified directories under "Packing Materials" or "Packing Materials—Shipping"; or write to Dept. IEN, Kimberly-Clark Corporation, Neenah, Wisconsin.

Kimpak
REG. U.S. PAT. OFF. & FOREIGN COUNTRIES

Kimberly Clark

CREPED WADDING

*T.M. REG. U.S. PAT. OFF. & FOREIGN COUNTRIES

BREVITY—Identify by IEN - 8953 if you write the maker

WRENCH . . Open end ratchet for pipe, tube, conduit, cable fittings

Source: TUBING APPLIANCE CO.
10319-23 Anza Ave., Dept. 21, Los Angeles, Calif.

New sizes have been added, following initial preliminary announcement of this TAC ratchet wrench, to provide 64 socket sizes ranging from 3/8 to 4 in. as compared to the overall range between 1/2 and 1 1/8 in., previously described.

The oval-shaped head carries a slot opening and in this opening is a rotating collar that engages and turns a socket also having the side slot opening. The collar is rotated by a ratchet mechanism operated by a hinged crank handle or by attachment of a standard socket-wrench handle. Adaptors can be snapped in to permit use of ordinary sockets.

BREVITY—Identify by IEN - 8954 if you write the maker

CONDUIT . . Galvanized steel tube, plastic coated to resist corrosion

Source: REPUBLIC STEEL CORP.
222-26 E. 131st St., Cleveland, 8, Ohio

To protect electric circuits

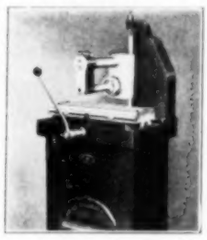
The company announces availability of its Electrunite electrical mechanical tubing with a plastic coating, black in color and standard at 0.020 in. in thickness. The coated tube is known as Dekoran-Coated. The plastic is polyethylene.

Conduit lengths are joined by a compression coupling after peeling the coating off at the ends. The coupling and conduit are then wrapped with corrosion-resistant insulating tape.

BREVITY—Identify by IEN - 8955 if you write the maker

MILLING . . Horizontal machine, hand or power feed, 6 by 20 in. table

Source: NOLAN CORP.
2333 E. Dominick St., Rome, N. Y.



List price is $750 for lever-operated hand-feed assembly of the company's new milling machine as shown in the illustration. The machine is designed to use motors to 2 hp. and to take a No. 40 American Standard arbor. It mounts a 6 by 20-in. table with 4 by 16 in. of working surface. Vertical range is through 5 inches. Cutters to 7 in. in diameter can be mounted under the overarm. Longitudinal feed with the hand lever or with a feed screw is through 12 inches. Longitudinal feed with power operation is through 8 inches. The quill is adjustable laterally through 2 inches. The overarm measures 2 in. in diameter.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8956 if you write the maker

LABOR-SAVING Moto-Bug (POWER WHEELBARROW)

- Hauls 10 cu. ft. of scrap, castings or bulk materials in big capacity hopper . . . makes man-hours 3 to 4 times more productive.
- Full power forward and reverse requires "no push, no pull" to travel, back up or to spot heavy loads.
- Driver rides on rear step (optional) . . . large steering wheel provides effortless maneuvering.
- Handy 33" width clears narrow doorways and aisles.
- Standard-make, 4 h.p. engine easily takes full load up 20% ramps and grades.

Interchangeable flatbed

moves over 1200 lbs. on sturdy 32" x 4 ft. platform . . . tilts for easy pull-away when unloading . . . has stake pockets for sideboards. Fork lift and scraper blade extend Moto-Bug's one-man economics to all kinds of material-handling jobs.

Get more facts from your Kwik-Mix distributor now . . . or send for Moto-Bug bulletin TODAY.

KWIK-MIX CO.
PORT WASHINGTON, WIS.
(Keehring Subsidiary)

BREVITY—Identify by IEN - 8957 if you write the maker

This Is The Difference Between Close-Coupled Pumps

THIS EXCLUSIVE FRAME DESIGN combines maximum space for packing maintenance with exceptional rigidity in a way that no pump assembled to a standard motor can do. Solid cast-iron with no joints from motor end housing to pump casing assures permanent alignment.

Keeps Your Costs Down, Too

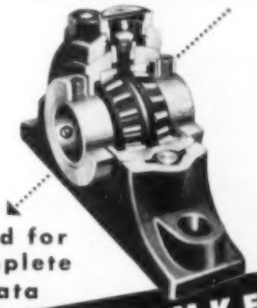
Motor and pump are designed for each other and made in the same plant. You have one responsible source for both . . . one guarantee of satisfaction. Every Allis-Chalmers pump representative is a competent application engineer who will help you select exactly the right pump for your needs. And 94 A-C Certified Service Shops provide nation-wide factory approved service.

Talk over your pump selection problems with your Allis-Chalmers Authorized Dealer or Sales Office or write Allis-Chalmers, Milwaukee 1, Wisconsin for Bulletins 52B6059 and 52B6140. A-3325

Electrifugal is an Allis-Chalmers trademark.

ALLIS-CHALMERS A-C

BREVITY—Identify by IEN - 8958 if you write the maker



Send for Complete data

DODGE-TIMKEN

America's champion power saver—the famous Dodge-Timken Bearing. Quality-proved by use on millions of industry's toughest jobs. Delivered from distributors' stocks in 4 basic types. Sizes from 1-3/16" to 8" available from stock. Completely assembled, factory tested, pre-lubricated, ready to mount on the shaft for 30,000 hours of uninterrupted service. Write for bulletin.

DODGE MANUFACTURING CORPORATION
600 Union St., Mishawaka, Indiana

DODGE
of Mishawaka, Ind.

BREVITY—Identify by IEN - 8959 if you write the maker

Switch to

PLATECOIL for
(REPLACES PIPE COIL)

TROUBLE-FREE Tank Heating and Cooling

Platecoils have many times the useful life of pipe coils thus preventing many production delays. When repairs are necessary, plates are changed from outside the tank in a matter of minutes without dumping tank solution. You can save STEEL, MAN-HOURS and MONEY by using Platecoils and you will enjoy TROUBLE-FREE heating and cooling.

NEW Technical Manual No. P56 simplifies the solution of heat transfer problems. Send for your copy today.

PLATECOIL
Division
KOLD-HOLD MFG. CO.
LANSING 4, MICHIGAN

BREVITY—Identify by IEN - 8960 if you write the maker

SQUARE D
for a COMPLETE LINE of
INDUSTRIAL PRESSURE SWITCHES

Write for Bulletin 9012
Square D Company
4041 North Richards Street
Milwaukee 12, Wisconsin

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY
DETROIT • MILWAUKEE • LOS ANGELES

BREVITY—Identify by IEN - 8961 if you write the maker

HANSEN COUPLINGS

GIVE YOU 2 Big Advantages

● With Hansen couplings you save precious minutes every time you change air tools—every time you connect or disconnect a fluid line carrying gas, liquid or grease.

To connect, you merely push plug into socket—flow starts instantly. To disconnect, pull back sleeve on socket—coupling disconnects. Flow is shut off instantly and automatically.

Available in a wide range of sizes and types, each type engineered to meet the specific requirements of your particular application.

One-way shut-off, two-way shut-off, and straight-through types.
Write for Catalog

THE HANSEN MANUFACTURING COMPANY
4041 WEST LYDIA STREET • CLEVELAND 11, OHIO

BREVITY—Identify by IEN - 8962 if you write the maker

Quick, Thorough Cleaning!

General Electric Heavy-duty Vacuum Cleaners

In more and more plants, General Electric Heavy-duty Vacuum Cleaners are being used because they speed thorough cleaning of floors and above-the-floor areas.

These powerful cleaners also provide efficient portable dust control around machines, make gathering of small metal or other scrap easy. Wet pickup is also a feature of this model. Write for details.

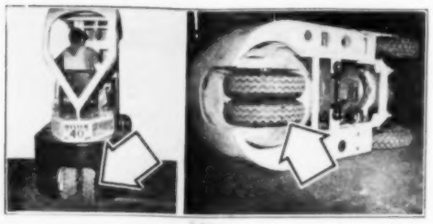
MAIL TODAY
General Electric Company, Dept. 22-3528
1285 Boston Ave., Bridgeport 2, Connecticut
Send, without obligation, details about General Electric heavy-duty cleaning equipment.
Name
Firm
Address
City State

GENERAL ELECTRIC

BREVITY—Identify by IEN - 8963 if you write the maker

TRUCK . . Engine drive fork design with dual steering wheel at the rear

Source: HYSTER CO.
2916 N. E. Clackamas St., Portland 8, Oregon

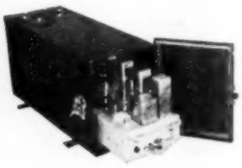


New design of the company's No. 20 and No. 40 engine-driven fork trucks, rating 1 and 2 ton respectively, includes a dual-wheel assembly in place of the single wheel in a previous design in the rear steering trunnion. The trunnion is connected to the steering wheel at the operator's position so seven turns of this wheel in place of the previous ten plus will swing it through 120 degrees. Turning effort is materially reduced. The present single-wheel machines, now in service, can be converted in the field to the dual-wheel arrangement. The company will supply complete specifications for both machine sizes on request.

BREVITY—Identify by IEN - 8964 if you write the maker

COMMUNICATING . . Carrier unit for two-way conversation in a mine

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Operation is at a fixed frequency of 100 kc. for an audio-frequency response of 300 to 3,000 cycles in this recently improved carrier-current FM transmitter-receiver for two-way mine communication. Installation can be made between a fixed mine station and a mine locomotive, between two fixed stations, or between two locomotives on a common line.

Stable voltage is provided by a 6-volt automobile-type storage battery which is maintained on charge from a dc. trolley line or by a motor-generator set on the locomotive. Equipment includes a loudspeaker calling unit and a telephone-type hand set. Plug-in design is used in all connections for power supply, control and tuning in the new equipment.

BREVITY—Identify by IEN - 8965 if you write the maker

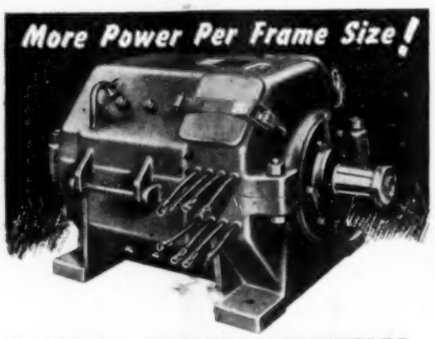
STORING . . Booklet on wood tanks describes their manufacture and the part they play

Hauser-Stander Tank Co.
4836-40 Spring Grove Ave., Cincinnati 32, Ohio

"This Great Age" titles new 28-page booklet on the manufacture of wood tanks, types, hooping, applications, all written from a non-technical standpoint.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8966 if you write the maker



ELLIOTT CROCKER-WHEELER
600 Series DC Mill Motor

■ The right motor for heavy duty mill and crane drives from 5 to 265 hp. As tough as it looks, and packing up to 33-1/3% more power in each standard size frame. Also available separately forced ventilated, protected self-ventilated, back geared. Write for the Mill Motor Bulletin—address Elliott Company, Jeannette, Pa.

CW-36

ELLIOTT COMPANY
General Offices & Main Plant Jeannette, Pa.
CROCKER-WHEELER DIVISION . . . AMPERE, N. J.
Branch Offices and Representatives in Principal Cities
Elliott Approved Service Shops Cover the Country

BREVITY—Identify by IEN - 8967 if you write the maker

Accurate "know how"

SPRINGMAKING "know how"—and, of course, modern manufacturing facilities—can mean a lot to spring users. The three springs illustrated are good examples of how Accurate can slash spring costs with modern methods. Where previously multiple operations were required in the manufacture of these springs, Accurate produces each in a single operation at a unit price of a fraction of a cent!

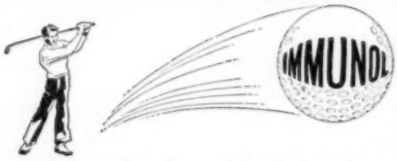
We'd like to show those of you who are users of large quantities of springs how we can cut *your* costs. Write or call today.

ACCURATE SPRING MFG. CO.
3807 W. LAKE STREET CHICAGO 24, ILLINOIS

Accurate Springs
Springs • Wire Forms • Stampings

BREVITY—Identify by IEN - 8968 if you write the maker

A NEW APPROACH



NON-OILY, INVISIBLE RUST PROTECTION

IMMUNOL added to any water forms a solution that prevents ferrous metals from rusting. Parts treated retain a non-oily, invisible film that not only stops rust but does it without the mess and handling problem that accompanies oils, greases and similar types of protective coatings.

IMMUNOL will protect parts indefinitely unless washed off, requires no time lapse for drying, is never sticky or tacky and can be painted or lacquered over without removal.

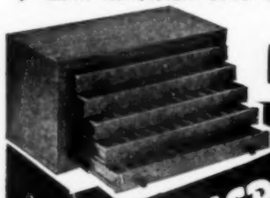
IMMUNOL is neutral, odorless, non-toxic and non-inflammable, and is an exceptional detergent and wetting agent.

IMMUNOL'S new approach can answer your rustproofing, cleaning and wetting out problems.

Send for Booklet:

Haas MILLER Corp.
4th & Bristol Sts. Philadelphia 40, Pa.

BREVITY—Identify by IEN - 8969 if you write the maker



HUOT
DRILL DISPENSER

No More Rummaging Through Stacks of Drills

No more running out of drills—your entire stock can be seen at a glance. Each size of drill has its own compartment with rounded bottom for easy selection. You can store dozens of small drills and several large ones in their own compartments. Built-in pricing or inventory system eliminates the need for cost sheets, and will keep a record of drills on hand. *Specifications:* 14½" long, 7¼" high, 7¼" deep. Hammerlin baked enamel finish over rugged steel. Made in three models for fractional, number or letter drills.

Write for Circular

By the makers of HUOT DRILL INDEX

HUOT MANUFACTURING CO.
565 No. Wheeler St., St. Paul W4, Minn.

BREVITY—Identify by IEN - 8970 if you write the maker

DURA-CUT ABRASIVE DISCS

(and on right angle portable grinders and disc sanders)

These new flexible discs are 1/4 thick while the ordinary coated discs have but a single layer of abrasive. Combining such a tremendous amount of additional cutting ability it is easy to understand DuraCut's startling advantages.

- Greater economy
- Longer life — 15 to 20 times.
- Faster, sustained rate of cut.
- Increased labor savings — less disc changing.
- Safe — strong — resist tearing.
- Available in a wide range of grits, grades and structures — permit control over rate of cut and finish.
- Available in raised hub or flat shapes.

Ask for a demonstration.

Typical applications . . . Blending and finishing of steel, stainless, alloy steel and aluminum welds . . . Removing rust and scale . . . Finishing sheet metal jobs . . . Auto body work . . . Cleaning weld spatters.

BAY STATE

BAY STATE ABRASIVE PRODUCTS CO., Westboro, Mass.
Chicago, Cleveland, Detroit, Pittsburgh • Distributors, All Principal Cities.

BREVITY—Identify by IEN - 8971 if you write the maker

PROFIT HAS MANY FORMS

when the material is

DUREZ

BEVEL GEAR TEETH TEST ACCURATE

It takes a plastic of uniform molding qualities to make bevel gears that check okay on this angular tester. This is one reason why Durez high-impact phenolic is used for gears that drive reels through 8 treatments in modern continuous rayon spinning. Molded gears require but a single tapping operation, laminated ones used previously required hobbing plus a machined metal insert. Durez has a smooth natural finish. Its chemical inertness permits use in installations where corrosive agents are present.

FLEXIBLE CHAIN COVER

resists acids, alkalies, corrosion

Many services expose chain drive coupling covers to these hazards that shorten the life of metal covers. For such services, a leading concern meets its customers' needs with grit-proof and dust-proof split housings molded of rag-filled Durez phenolic plastic. The plastic covers provide sealed-in lubrication and maximum protection for the life of the coupling, when used with suitable lubricants. They are compact, strong, and easy to assemble, and they add to the good appearance of the equipment. Bosses and recesses, including tapered grooves for oil seals, are formed in the mold.

FOR MOLDERS DESIRING APPROVAL under MIL-P-14A, Durez is producing compounds having mechanical, electrical, and chemical characteristics in many popular combinations. Durez field technicians can help you, too, in applying molding compounds or resins to your processes. To keep informed on new uses of phenolics, write (on your letterhead, please) for our monthly Plastics News. Durez Plastics & Chemicals, Inc., 1709 Walck Road, N. Tonawanda, N. Y.

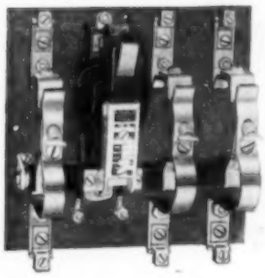
DUREZ

Phenolic Plastics that fit the job

BREVITY—Identify by IEN - 8973 if you write the maker

SWITCH . . Magnetic contactor in designs to hold, transfer, reverse

Source: LUMENITE ELECTRONIC CO.
405-9 S. Dearborn St., Chicago 5, Ill.



Three types are included in the company's new line of magnetic contactors capable of handling loads to 400 amperes. All employ floating armatures essentially free from ac. hum, copper-to-copper or silver-to-silver contacts that combine wiping action with instantaneous switching, springs to provide contact pressure, ebony-asbestos mounting panels with wiring on the back and power and load connections at the top and bottom. The operating coils are wound for 24-hr. duty and are guaranteed not to over-heat. Open type construction is standard in the line.

Series A is designed for circuit opening and closing and is available in 1, 2, and 3 poles with ratings minimum at 30 and maximum at 400 amperes. Two types in this series can be specified for electric hold and operate and for electric operate and mechanical hold. Two operating coils are employed in the latter case, one to close and one to open the circuit. Both can be applied for remote control.

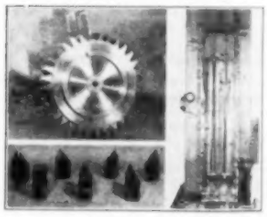
Series B is an electrically-held design for transfer duty as in switch-over service from one circuit to another in event of power failure. Normal power energizes the solenoid in the assembly so it holds the contacts in place against spring pressure. Power failure permits both gravity and the spring to break the contact and simultaneously make contact with the emergency system. When normal power is restored the solenoid is again active and original contact is restored. This assembly is available in 2 and 3 pole circuits with ratings from 30 to 300 amperes.

Series C is built in 3 and 4-pole assemblies for reversing service in three available capacities at 2 hp., 3 to 5 hp., and 7½ to 10 hp. A typical application is in laundry equipment. The reversing action is both electrical and mechanical.

BREVITY—Identify by IEN - 8974 if you write the maker

BROACHING . . Vertical machine for supercharger hubs and blade anchors

Source: LAPOINTE MACHINE TOOL CO.
51 Tower St., Hudson, Mass.



The "pine tree" slots in supercharger hub rims and the mating blade bases are both broached on new design of the company's 15-ton vertical 90-in. stroke single-ram machine. Employing suitable fixtures for the two parts, a complete hub can be machined in 65 min. to produce 32 of the slots. The blades are broached at a speed of 60 per hour. Tolerances are to 0.0005 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8975 if you write the maker

STANDARDIZE

with OHIO "STOCK" GEARS and REDUCERS

Cut costs without sacrificing quality by standardizing with Ohio STOCK gears and speed reducers. Available in an infinite variety of types, sizes, capacities and ranges. 1000 to 1 your power transmission problems can be solved with Ohio STOCK gears and reducers usually "off the shelf" of your nearest Ohio Gear distributor.

ESTABLISHED 1918
THE OHIO GEAR COMPANY
3345 EAST 170TH STREET • CLEVELAND 10, OHIO

Ohio STOCK gears and reducers are made to precision standards in production quantities to cut costs to you.

OHIO GEARS

BREVITY—Identify by IEN - 8976 if you write the maker

CONTROL POWER BETTER

ROCKFORD CLUTCHES

BREVITY—Identify by IEN - 8977 if you write the maker

CASTELL LOCKTITE HOLDER AND IMPORTED LEAD

—the "team" that simplifies your drawing and designing

REFILL DRAWING PENCIL
(black or colored)

Patented clutch holds lead in grip of iron. With push-button release, your fingers never touch the lead. Prevents slipping, smearing, smudging.

No. 9030 CASTELL REFILL IMPORTED Drawing Leads Degrees 7B to 9H

Perfect for LOCKTITE and usable in all other standard holders. Also available in red, blue, green, yellow, carmine, orange, white and silver.

A.W. FABER-CASTELL PENCIL COMPANY INC.

BREVITY—Identify by IEN - 8978 if you write the maker

SHENANGO Centrifugal CASTINGS ... KEY TO SAVINGS

Teamed up for longer life under pressure

SHENANGO CENTRIFUGAL CASTINGS OF MEEHANITE METAL

These ram pistons, centrifugally cast of Meehanite Metal for 500-ton hydraulic press, must withstand 2,000 p.s.i. Completely machined and assembled by Shenango.

FIRST, Shenango's centrifugal process means a uniform, high-strength, pressure-dense casting, free from sand inclusions, blow holes and other defects. Next, in Meehanite Metal you have finer graphite flakes, always more evenly dispersed, thus avoiding stress concentrations and permitting a finer finish.

So here's a combination you just can't beat for wear-life . . . for resistance to abrasion, pressure or shock . . . for long-range economy!

If your plans call for essentially symmetrical parts, large or small, rough, semi- or finish-machined, check with Shenango. Get *all* the facts! Informative bulletins are yours for the asking.

SHENANGO-PENN MOLD COMPANY
Dover, Ohio
Executive Offices: Pittsburgh, Pa.

SHENANGO

ALL RED BRONZES • MANGANESE BRONZES • ALUMINUM BRONZES
MONEL METAL • NI-RESIST • MEEHANITE METAL

BREVITY—Identify by IEN - 8979 if you write the maker

A TOOL BOX AT YOUR FINGERTIPS

49-16

INTERCHANGEABLE COUNTERBORE SETS

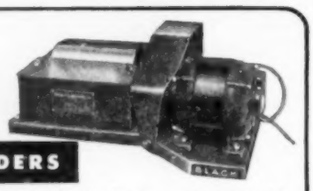
Continental Interchangeable Counterbore sets give you a wide variety of cutting tools in a compact, convenient form. Three sets are available, for the large or small toolroom. Each set features the famous Continental indestructible drive that will not stick, will not break, and is always hand detachable. Full details are given in Bulletin D27161. Send for your copy.

CONTINENTAL TOOL WORKS
Division of Ex-Cell-O Corporation
Detroit 22, Michigan

CTW

BREVITY—Identify by IEN - 8980 if you write the maker

PORTABLE...MOTOR DRIVEN

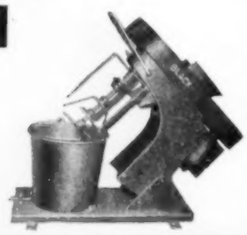


SPREADERS

Made for all kinds of adhesives . . . hot or cold. Applies an even, economical coat. 115 volt AC motor. Floor stand with casters available if desired. Write for Bulletin 11-A.

MIXERS

Made in 2, 5, 7½, and 15 gal. sizes. Powder added gradually through oscillating sifter. Arm hinged so that it can be tilted out of the way. Two way agitation. Write today for Bulletin 11-B.



THE BLACK BROTHERS CO., INC.
MENDOTA, ILLINOIS, U. S. A.

BREVITY—Identify by IEN - 8981 if you write the maker

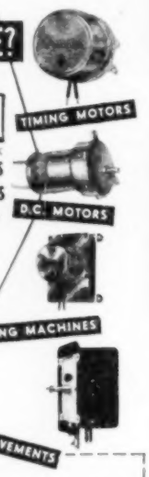
DESIGNING FOR DEFENSE?

GET ENGINEERING DATA ON

SYNCHRON

TRADE MARK

TIMING MOTORS - TIMING MACHINES
CLOCK MOVEMENTS - D. C. MOTORS



SYNCHRON synchronous motors meet your requirements for compact power. Pulls up to 8 oz. direct load continuously at 1 R.P.M. Gear trains can be furnished to convert to any speed. Unusual actions can be incorporated in movement. Our engineers will be glad to work with you in developing motors for special applications.

Hansen D.C. motors powered servo units which won Army-Navy E. Used also in aircraft instruments and radio control mechanisms.

HANSEN MANUFACTURING CO. INC. PRINCETON, INDIANA

Please send SYNCHRON engineering data. (9-50)

NAME .....

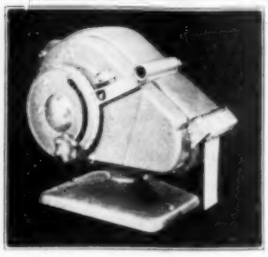
FIRM ..... STREET .....

CITY ..... STATE .....

BREVITY—Identify by IEN - 8982 if you write the maker

PACKAGING . . Adjustable dispenser for self-adhesive tape to 2 in. in width

Source: BETTER PACKAGES INC.
251 Canal St., Shelton, Conn.



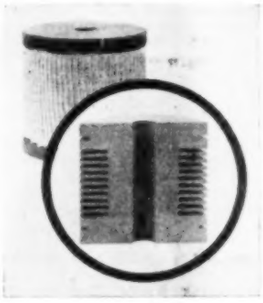
Desired length of tape delivery to a maximum of 10 in. per stroke is set on a dial at the side of this new Big Inch No. 20 crank-operated dispenser. The adjustment is in two ranges, each obtained by application of change gears. One range is to 6 in. the other is to 10 inches.

The dispenser takes tape rolls made of cloth, paper, cellulose, vinylite to 8 in. in diameter. The tape feeds out over a disc in connection with peeler rings that remove it from the disc so it moves forward for delivery in flat uncurled form. Several narrow rolls or a single wide roll can be handled at one time. Slitters can be specified to delivery the single roll in several narrow parallel strips. Mounting is on a swivel base for bench application.

BREVITY—Identify by IEN - 8983 if you write the maker

FILTERING . . Molded cartridge made of cellulose fibers for use on oil

Source: BRIGGS FILTRATION CO.
47 River Road, Dept. "N", Washington 16, D. C.



Cellulose material is mixed with a bonding agent and is formed under pressure into cartridge elements for service as replacement units in standard makes of automobile truck and equipment filters in a new process that has been developed by the company. Size of the fibers controls porosity of the cartridge. A series of thermal processes fixes the finished dimensions. The cartridge is impervious to water and so retains its original dimensions in use.

BREVITY—Identify by IEN - 8984 if you write the maker

CASTINGS . . Technical article reprint summarizes developments in cast-weld parts fabrication

Steel Founders' Society of America
920-A Midland Bldg., Cleveland 15, Ohio

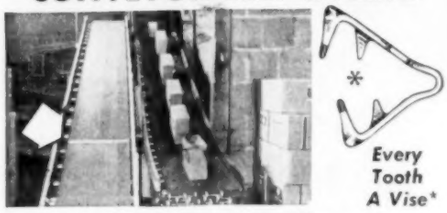
Product redesign examples are stressed in 10-page reprint booklet, "Cast Weld Construction", based on the Society's recent Conference. Text describes the problems involved, design features, properties of the fabricated assemblies.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8985 if you write the maker

ALLIGATOR

CONVEYOR BELT LACING



*Every Tooth A Vise**

in Long Continuous Lengths for Conveyor Belts . . . . .

- ★ Excellent for Package Conveyors, Portable Loaders, Trenching and Ditching Machines, etc.
- ★ In canneries where corrosion or rust is a problem specify Alligator made of Monel.
- ★ For magnetic separators or anti-sparking specify Alligator made of Everdur.
- ★ Separable and smooth on both sides.
- ★ 12 sizes. For belts from 1/16" to 5/8" thick—and *any width*.

Order from Your Supply House. Ask for Bulletin A-60.

FLEXIBLE STEEL LACING CO. 4610 Lexington St., Chicago 44, Ill.

JUST A HAMMER TO APPLY IT

BREVITY—Identify by IEN - 8986 if you write the maker

Titeflex

ALL-METAL FLEXIBLE TUBING

. . . FOR VIBRATION
. . . FOR FLEXING
. . . FOR MISALIGNMENT

You can't beat Titeflex for conveying liquids, gases or semi-solids when there is any kind of motion present. Here are the facts about this better-built flexible tubing:

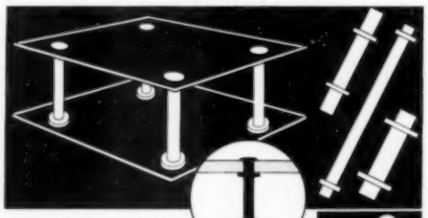
- ★ Made in five metals—brass, bronze, stainless, Monel, Inconel.
- ★ Types and sizes to withstand heat to 1550°F.
- ★ Types and sizes for pressures up to 6800 psi.
- ★ Supplied with any type of fittings—standard or special.
- ★ Stays flexible and stays tight under severe conditions.

There's a style of Titeflex for almost every need—and Titeflex is *all-metal*, to last longer in any kind of service.

Write for complete catalog.

Titeflex, Inc.
506 FRELINGHUYSEN AVENUE
NEWARK 5, N. J.

BREVITY—Identify by IEN - 8987 if you write the maker



specify Hassall

DOUBLE HEADING

to meet your assembly's requirements

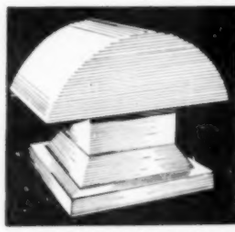
Your screw machine fasteners may be redesigned for production through our double heading method, with substantial savings. Illustration shows double heading in a spacer application engineered by HASSALL.

Inquiries answered quickly . . . REQUEST FREE CATALOG . . . 3-color Decimal Equivalent Wall Chart.

JOHN HASSALL, INC.
132 Clay Street, Brooklyn 22, N. Y.

Hassall

BREVITY—Identify by IEN - 8988 if you write the maker



FRESH AIR REDUCES FATIGUE GIVE 'EM AIR—FRESH AIR! WATCH PRODUCTION CLIMB!

Model T Roof Ventilator, Hood Opens Locked in Any Desired Position With or Without Dampers Propeller Pitch Adjustable

Industrial Air Model T Roof Ventilator can be used as a supply fan or to discharge contaminated air. Rugged construction. Sizes for all specifications from 18" through 72" in diameter, belt or direct driven operation.

Duct Fans
Direct or Belt Driven
Utility Man Cooler
Portable Man Cooler
Roof Ventilators
Duct Type Fan
Duo Duct

Represented in All Principal Cities
Write for Catalog of Our Complete Line

THE HARVEY P. BERTRAM CO.
1008 W. Ninth St. Cincinnati, Ohio

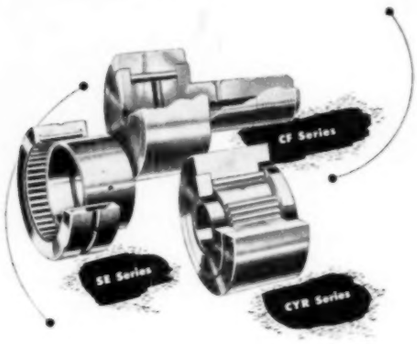
BREVITY—Identify by IEN - 8989 if you write the maker

• This illustrated booklet shows how Invincible Units are saving money by efficiently salvaging unfused flux on submerged arc welding jobs. Invincibles operate more rapidly and far better than any manual method. Also, by eliminating fine dust ("flour") from the salvaged flux, they reduce welding rejects. Invincible Units are compact, easily installed and able to withstand continuous operation.

Send for your copy of this booklet now!

INVINCIBLE VACUUM CLEANER MFG. CO.
DOVER, OHIO

BREVITY—Identify by IEN - 8990 if you write the maker



MULTIROL *precision is* PERMANENT

The fine precision originally built into every McGill Multirol Bearing actually lasts longer. It can easily be considered permanent by comparison because Multirol Bearings are free from early internal wear that can destroy the accuracy of friction type bearings.

The rolling action of small diameter rollers maintaining a constantly lubricated roller line contact with raceways makes the difference — keeps the Multirol Bearing equipped machinery operating at top efficiency without costly maintenance for frequent adjustments and bearing replacement.

For the increased production demands just ahead you will need the performance extras of McGill Multirol Bearings. Adopt the SE Series for precision handling of increased loads when radial space is limited. Either the CF Series with stud or the CYR Series for shaft mounting will withstand heavy shock load in any kind of cam action application.

Write today for descriptive Multirol® Bearing Bulletins.

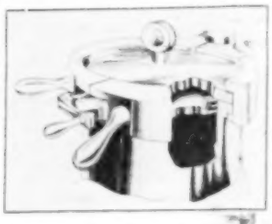
McGILL® precision bearings

McGILL MANUFACTURING CO., INC., BEARING DIVISION
100 N. LAFAYETTE ST., VALPARAISO, INDIANA, U. S. A.

BREVITY—Identify by IEN - 8992 if you write the maker

SEALING . . Tank cover holds against pressure and vacuum

Source: CLEARING PROCESS ENGINEERS
High & Nolton Sts., Willow Springs, Ill.



New cover applies on tanks and process equipment required to handle bulk solid materials under vacuum or pressure. It is a quick-opening design available to specification for each application. It can be operated manually or with semi-automatic or automatic closing and opening controls.

The construction employs a flanged piston fitted with sealing gaskets to hold against pressure both downward and upward. The piston rides in the cylindrical throat of the cover assembly beneath a cover plate. This plate is held in place by a hinged ring with flanges that engage above the plate and below the flange on the cylinder element. The ring latches in closed position. When pressure is exerted inside the tank, forcing the piston upward, the plate is held up also and engages a mating ring and ridge so the hinged ring cannot be opened.

A ring is included for application of overhead equipment to lift the cover free after it has been released. The company is prepared to furnish tanks with the cover assembly in any size to 30 in. in diameter by 6 ft. in depth for working pressure to 1,000 pounds. The cover alone can be supplied when required by application.

BREVITY—Identify by IEN - 8993 if you write the maker

PUMP . . Self-priming centrifugal, truck mounted with engine or motor

Source: CHAIN BELT CO.
1675 W. Bruce St., Milwaukee 4, Wis.

Accessibility for adjustment and replacement of wearing parts together with application of a self-lubricating shaft seal on the suction side feature construction of the company's new design in its Rex Series-M line of portable centrifugal pumps. Seven sizes have ratings from 67 to 1,500 gpm. against a 25-ft. total head including 10-ft. suction lift. Smallest pump has 1½-in. suction and discharge connections. The largest measures 6 in. at both points.

Each unit is arranged with an adjustable device to pick off entrained air from the impeller for self-priming action as previously described IEN-4574-42. Assembly is in direct connection to a gasoline engine rating 1 to 40 hp. or to an equivalent electric motor as specified. The smallest assembly measures about 14 by 13 by 19 in. and weighs 65 lb. with skid mounting. The largest measures 88 by 50 by 68 inches. It weighs 2,140 lb. on a pneumatic-tired two-wheeled truck.

Bulletin 51-27, 20 pages, presents illustrated detail description and specifications covering construction and operating characteristics of each size in the line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8994 if you write the maker

BREVITY—Identify by IEN - 8995 if you write the maker

UNIVERSAL ENGINEERING COMPANY

FRANKENMUTH 6, MICH.

BREVITY—Identify by IEN - 8996 if you write the maker

Inexpensive Hand-Propelled Crane with Chain Hoist

If hard, back-breaking work is required on the part of several men to move a machine in your plant, you should seriously consider either hand-propelled or electric Cleveland Tramrail cranes. Work that requires hours can often be done in minutes with an overhead crane. Many cranes pay for themselves in only a few months time.

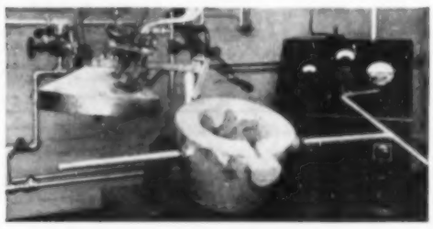
GET THIS BOOK!
BOOK No. 2008
Packed with valuable information . . .

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4236 EAST 289th ST., WICKLIFFE, OHIO

CLEVELAND TRAMRAIL

BREVITY—Identify by IEN - 8997 if you write the maker

GOT A small METAL-MELTING PROBLEM? *Here is an efficient economical answer!*



15 lb. capacity, Pot Tilting Electric Furnace melts any metal quickly, easily

A versatile small furnace for laboratory, pilot plant and small production. Engineered for economy. Designed for easy, practical use. Pot can be used as crucible or tilted to pour directly into molds. Roof lifts and swings for easy loading. Complete with controls. Literature on request.

WRITE FOR DETAILS

FEMA

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: In BRAZIL — Equipamentos Industriais "Eisa" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castelli Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Casco, S. de R. L. Atenas 32, Despacho 14, Mexico City, D. F.

BREVITY—Identify by IEN - 8998 if you write the maker

REEVES BROTHERS, Inc., 54 Worth Street, New York 13, N. Y.

BREVITY—Identify by IEN - 8999 if you write the maker

Now available for efficient, cost-saving packing of shells, cartridges, fuses and other military material, are American pre-assembled interlocking partitions made to meet government specifications.

Wire for prices on your requirements.
Volume production facilities.

American PARTITION CORPORATION
1043 N. 30TH ST. UPTOWN 3-8108 MILWAUKEE 10, WIS.
Eastern Plant and Sales Office: Bound Brook, New Jersey
Bound Brook 9-3100
Western Representative: Seaman Heyman Co. — Ashbrook 3-3244
Merchants Exchange Building, San Francisco 4, Calif.
Midwest Sales Representative:
767-73 Milwaukee Ave., Chicago 22, Ill. — Monroe 6-1762

BREVITY—Identify by IEN - 9000 if you write the maker

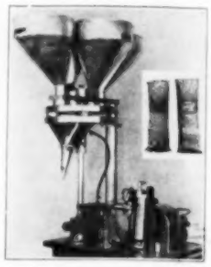
Only American Wedgbelt Sheaves give you the advantages of quicker assembly, easier breakaway yet maximum clamping action in both fixed-pitch and adjustable-diameter multiple-groove sheaves. Assembly is quicker because of one-piece, accurately-machined bushings—breakaway is easier because of the exclusive "perfected taper" of American Wedgbelt bushings—maximum clamping action is assured because the bushings are *split all the way* through. In addition, precision manufacturing assures accurate, long-wearing grooves and balanced, vibration-free operation. Look to American as your source of supply for *all* V-belt drive products: Taper-bushed Standard Wedgbelt Sheaves, Double-Taper Adjustable-Diameter Wedgbelt Sheaves, F.H.P. Sheaves and F.H.P. and Multiple Wedgbelts. Mail the coupon below for full information on the complete line of American Wedgbelt Drives.

The American Pulley Company 4242 Wissahickon Ave., Phila. 29, Pa.
Please send me information on American Wedgbelt Drives.
NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

BREVITY—Identify by IEN - 9001 if you write the maker

PACKAGING . . Volumetric machine measures four products into container

Source: PAUL L. KARSTROM CO.
1818-24 W. 74th St., Chicago 36, Ill.



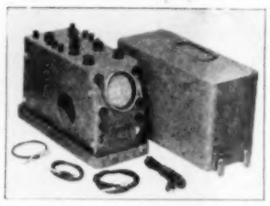
Dry materials feed from four supply hoppers at the top of this new Spee-Dee Multi-Pak filling machine to a rotating plate for transfer through measuring cups, one at a time, to the delivery nozzle around which a container is placed. The feed is progressive so each material is delivered in turn to come to rest within the container on the material previously fed. Operation is at 18 filled containers per minute. This compares with operation of the machine in which the materials can be blended for production at 40 per minute.

A mechanism on the assembly delivers a shot of compressed air through the nozzle to open a flexible container so the first material will be delivered into the bottom without requiring agitation. The machine is available to order.

BREVITY—Identify by IEN - 9002 if you write the maker

TESTING . . Portable oscilloscope mounts 3 in. tube, for plant laboratory

Source: HICKOK ELECTRICAL INSTRUMENT CO.
10544-48 Dupont Ave., Cleveland 8, Ohio



Miniscope Model 380 is a new portable oscilloscope assembled in an aluminum housing in shock-proof and moisture-proof arrangement. The instrument weighs 14 pounds. It measures 6 by 13¼ by 9 inches. List price is about $290 for the unit.

Operation is on 110-volt ac. at 50 to 1,600 cycles. Power consumption is 50 watts at 110 volts. Accessories include a 4-ft. coaxial test cable, a 4-ft. ground lead, 6-ft. power cable and ruled celluloid screen. The aluminum carrying case is in water-tight construction. The instrument has a frequency coverage to 2.5 mc. and sensitivity to 0.1 rms. volts per inch. Direct connection is provided to the cathode-ray tube element. There is provision for Z-axis modulation. A telescopic light shield slides back into the housing when it is not required.

BREVITY—Identify by IEN - 9003 if you write the maker

WELDING . . Instruction book of 32 basic and 29 advanced lessons in arc welding

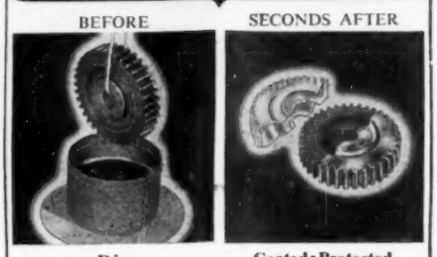
Lincoln Electric Co.
13020 Coit Road, Cleveland 8, Ohio

Sixty-one lessons are presented in detail by new 320-page "New Lessons in Arc Welding", list price $1. They include practical instructions in welding fundamentals, procedures for a number of materials, automatic and hidden-arc welding, identifying metals, joint selection, fabrication.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9004 if you write the maker

HOT MELT PLASTIC COATINGS
for GEARS • TOOLS • PRECISION PARTS



Dip — Coated • Protected

DIP-PAK Protect vital, expensive tools, gears, and machined parts during storage and shipping with Fidelity's durable, transparent plastic coatings. Merely melt coating briquette, dip parts, cool. Lasts indefinitely. Tough; abrasive, moisture, rust resistant. To remove, slit, peel. Re-melt, re-use coating. Economical, practical, rapid. Protect parts; save money

Write for Bulletins and Free Samples
Fidelity Chemical Products Corp.
470 Frelinghuysen Avenue, Newark 5, N. J.

BREVITY—Identify by IEN - 9005 if you write the maker

SLITTERS AND ROLLWINDERS

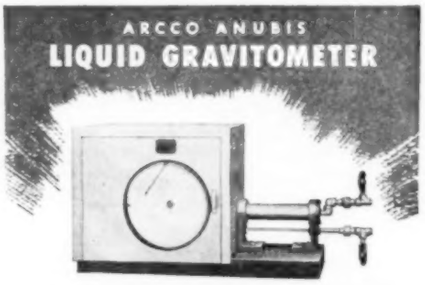
For all types and sizes of roll-wound products

From cellophane to sandpaper, from bandages to brake lining, *Camachine* experience leads the way in every field of roll production. There's a *right Camachine* for all types of paper or paperboard; textiles, rubber, foil or plastic; plain, coated, laminated or tacky-surfaced materials. *Camachines* are engineered for dependable, top-quality roll production at record-breaking speeds. For information and literature regarding roll production equipment for any type of material, write to:

CAMERON MACHINE CO.
61 POPLAR ST., B'KLYN 2, N.Y.

Camachine®
First in roll production equipment

BREVITY—Identify by IEN - 9006 if you write the maker



...for PIPELINES, REFINERIES, GASOLINE PLANTS

This ruggedly built instrument of laboratory accuracy is ideal for quick checking and for continuous recording of Specific Gravity of liquids under line pressure. Changes in Specific Gravity of sample are recorded with a very minimum of time lag. Foreign liquids and gases are automatically purged from sample. No moving joints or stuffing boxes to cause friction or leakage. Temperature corrected, this precision instrument is adaptable to high pressures. Hundreds are in daily use in plants and refineries of major companies. Also available as a controlling instrument. Send for bulletin No. 111A.

AMERICAN RECORDING CHART CO.
3113 E. 11th St. • Los Angeles 23, Calif.

Available for Early Delivery

BREVITY—Identify by IEN - 9007 if you write the maker

the Revolving Joint with Shock Absorbers

ROTARY UNIONS
TRADE NAME

Ball bearing construction, anti-wobble shafts, and a tight rust-proof and dirt-proof Monel mechanical seal make ROTARY UNIONS outperform and outlast other revolving connections.

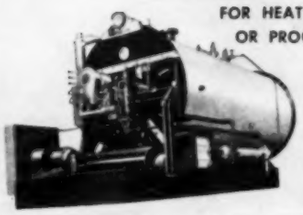
In addition, ROTARY UNIONS *float* on flexible hose connections which absorb misalignment and shock, adding months of trouble-free service. Positive sealing at steam pressures up to 200 PSI. ROTARY UNIONS are the most efficient connection for heating and cooling purposes on all revolving connections. Write for Catalog 600-N for complete information.

"WHERE Good Connections COUNT"
PERFECTING SERVICE COMPANY
332 Atando Ave. Charlotte, N. C.
Offices in Jersey City — Chicago — Philadelphia — Cleveland — Pawtucket, R. I.

BREVITY—Identify by IEN - 9008 if you write the maker

STEAM

FOR HEAT OR PROCESS



A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability.

Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 317

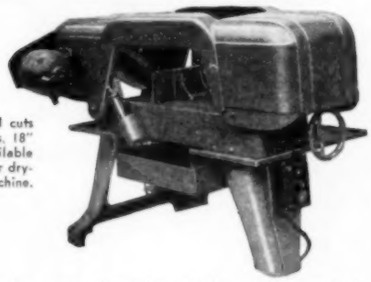
SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emmaus, Pa.
Exec. Offices: Times Bldg, Times Sq., New York N. Y.
SUPERIOR STEAM GENERATORS

BREVITY—Identify by IEN - 9009 if you write the maker

WE GO ALL OUT

to Maintain High Machining Standards and Close Tolerances

JOHNSON
METAL CUT-OFF
BAND SAWS



MODEL J cuts 10" rounds, 18" flats. Available as a wet or dry-cutting machine.

Accuracy in a saw depends entirely on the way it is built. . . . That's why we go the limit in maintaining high machining standards and close tolerances in the manufacture of Johnson Band Saws. YOU CAN'T BUY A BETTER SAW THAN A JOHNSON. For value, capacity, fast, continuous cutting action and economy, Johnson Saws lead the field. They will pay for themselves quickly and give dependable trouble-free service year after year.

MODEL B smaller machine shown at right . . . Does a man-size job. Cuts 5" rounds, 10" flats. Furnished with or without casters. Really portable, can be taken anywhere for on-the-job cutting.

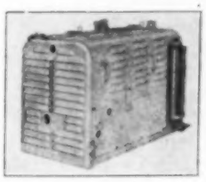
THERE IS A DEALER NEAR YOU

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

BREVITY—Identify by IEN - 9011 if you write the maker

GENERATOR . . Engine driven unit replaces battery on electric truck

Source: READY POWER CO.
3830 Grand River Ave., Detroit 8, Mich.



Improved construction of the Model-H engine-driven generator, previously described IEN-4241-50, is known as Model H-A. It is available with generator ratings at 36, 48 and 60 volts dc. for use on fork, platform or crane trucks rating 2 to 5 ton. The engine employs a governor equipped with oilers for cleaning without disassembly. The engine is mounted in a new design of front support on rubber.

The generator at the opposite end is mounted on flanged tubular Lord shock mountings to provide both shear and compression loading. A new type muffler assures quiet operation. An outside 5-gal. fuel tank is set into the recessed housing to prevent spillage into the unit.

Overall dimensions are 41¾ by 27 by 29⅝ inches. Base dimensions are 40 by 22 inches. Maximum power rating is 12 kilowatts. The engine idles at 900 rpm. and operates between 1,400 and 1,075 rpm. Net weight is 1,200 pounds.

BREVITY—Identify by IEN - 9012 if you write the maker

CLEANING . . Scented powder mixes with water for use in washrooms

Source: SUGAR BEET PRODUCTS CO.
301 Waller St., Saginaw, Mich.

Packaged in 5 lb. units

Formula SBS-50 is a new powdered material combining a detergent, a disinfectant and a scent for use on toilets, sinks, showers, on washroom floors and walls. Three to four ounces are mixed with a gallon of warm water prior to application. Dirt that is loosened when the solution is applied is wiped up with a clean cloth. No rinsing is required.

BREVITY—Identify by IEN - 9013 if you write the maker

ROCK DRILLING . . Hammer attachment and electric drill, ¼ to 1⅜ in.

Source: WODACK ELECTRIC TOOL CORP.
4625-29 W. Huron St., Chicago 44, Ill.

New combination of the company's portable universal electric drill, which rates ⅝ in. in steel, and a reciprocating hammer attachment is known under the trade name of Do-All. The hammer takes ¼ to 1⅜ in. bits to drive holes in concrete. It can be removed from the drill which then applies in normal manner for work in metals or non-metals.

The drill is ball bearing with lubricant sealed in. Its universal motor operates on 110-volt ac. or dc. The housing is made of aluminum. Drill and attachment weigh 15 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 9014 if you write the maker

Here's a better way to Mark Parts – in Colors!

Whether it be marking for dimensions, inspection, stocking or assembly identification, you'll find the Flo-master does a better job in less time. Its felt tip glides over any surface – metal, plastic, wood, etc. with broad bold lines or fine lines.

Flo-master semi-opaque inks – waterproof, non-smudging, fast-drying – come in a wide range of colors.

For light colored surfaces, use Transparent Inks with "POCKET SIZE" Flo-master. For dark, hard-to-mark surfaces, use Semi-opaque Inks with the "KING SIZE" Flo-master.

Adopt Flo-master Color Marking and see the difference!

Ask your supplier or write to Cushman & Denison Mfg. Co., 153 West 23rd Street, New York 11, N. Y.

Cap of "King Size" may be screwed to bench to serve as stand.

Flo-master
FOUNTNBRUSH

BREVITY—Identify by IEN - 9015 if you write the maker

3 VALUES!

★ One Piece Construction
★ Wide Wire Range
★ Economically Priced

BLACKBURN
Hi-Strength
TERMINAL LUGS

Strongly constructed—all in one piece—yet small and compact, to fit in tight quarters. UL approved. Only 6 sizes cover a range from No. 14 to 1,000,000 CM. Specify Blackburn and get a quality lug in the low price field.

JASPER BLACKBURN CORP.
35 Madison St., St. Louis 6, Mo., CEntral 3007

BREVITY—Identify by IEN - 9016 if you write the maker

HYDROSCALE

Proved on Hundreds of Jobs

SAVES DOLLARS IN TAKING INVENTORY AND IN CHECKING INCOMING MATERIALS

• This hydraulic crane scale weighs the load as you lift it to move it—Makes weighing so simple that it's done where it might otherwise be neglected. Cuts manpower and equipment tie-ups. Eliminates the need for weighing stations.

Low headroom
•
3 Dial sizes: 12, 24, 30"
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Models 500 to 100,000 lbs. capacity

Write for our catalog.

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20624 WEST 8 MILE ROAD · P. O. Box 4754 · DETROIT 19, MICH

BREVITY—Identify by IEN - 9017 if you write the maker

WHEN YOU NEED STEEL CALL RYERSON

Contact Ryerson for prompt shipment of dependable steel products. Because of great demand, all sizes are not always in stock; but you will find that we can usually take care of your requirements.

PRINCIPAL PRODUCTS

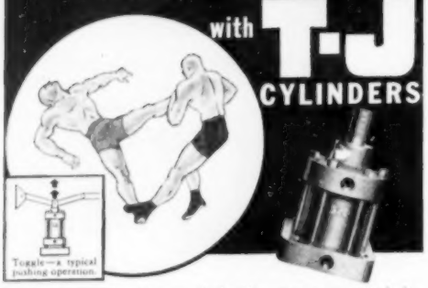
Bars • Structurals • Plates • Sheets • Tubing • Alleghany Stainless • Alloy Steel • Safety Floor Plate • Babbitt • Solder Metal Working Tools & Machinery, etc.

JOSEPH T. RYERSON & SON, INC.

Plants: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles, San Francisco

BREVITY—Identify by IEN - 9018 if you write the maker

Rasslin' with HIGH COSTS?
SAVE on "MUSCLE JOBS"
with T-J CYLINDERS



Toggle—a typical pushing operation.

Pulling—as shown in 1st class lever.

Lifting—a straight thrust movement.

Air or hydraulic power—applied by T-J Cylinders—gets an amazing lot of tough jobs done for industry . . . *faster, more efficiently,* and at *lower cost!* Use T-J Cylinders for a wide range of pushing, pulling, lifting, clamping or control jobs . . . 100 lb. or 50,000 lb. Many standard sizes and styles . . . both cushioned and non-cushioned types . . . precision-built, dependable. Write . . . The Tomkins-Johnson Co., Jackson, Mich.

35 YEARS EXPERIENCE

TOMKINS-JOHNSON

BREVITY—Identify by IEN - 9019 if you write the maker

where there's heat . . .

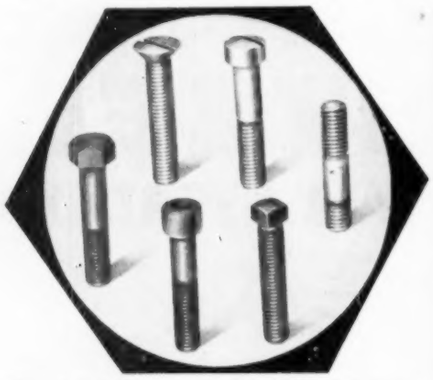
. . . there's a need for instant, accurate reading of surface temperatures to prevent costly damage to materials in process and equipment. The handy Alnor Pyrocon is unequaled for quick, accurate reading of surface temperatures of molds, revolving rolls, bearings, steam traps, plastics, metals and many other materials. It's a well balanced, handy instrument that will stand heavy use, yet perform with laboratory precision. A wide selection of thermocouples and extension arm assures its adaption to your type of service. Send for Bulletin No. 4257. Illinois Testing Laboratories, Inc., Room 517, 420 N. La Salle Street, Chicago 10, Illinois.

send for bulletin now!

Alnor

PRECISION INSTRUMENTS FOR EVERY INDUSTRY

BREVITY—Identify by IEN - 9020 if you write the maker



Cleveland has specialized for 35 years in making *Top Quality*

CAP SCREWS
SET SCREWS • MILLED STUDS

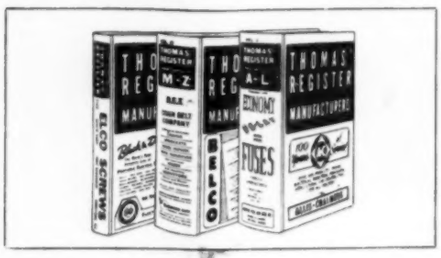
Write for catalog and prices

CLEVELAND *Top Quality* FASTENERS

THE CLEVELAND CAP SCREW COMPANY
2917 EAST 79TH STREET • CLEVELAND 4, OHIO
Warehouse: Chicago Philadelphia New York Providence
Ask your Jobber for Cleveland fasteners

For Your Special Information

ALL MAKERS ARE LISTED — IEN S-29



Orders received to date indicate, by their number, that the 1952 Edition of Thomas' Register will soon be completely allocated. We suggest that you put in your order now to assure delivery of this source-reference publication for the coming year. The Register is the one place where "all makers of all products are listed" and where their ratings and helpful data on their products are all assembled in one place.

BIG SHOW — IEN S-30

Near 250 industrial firms and organizations are set to exhibit their products at the 33rd annual National Metal Show in Detroit during the week of October 15-19. At the same time some 250 technical papers will be presented on all "metals" subjects. Getting things done well and quickly with every possible use of available materials will have major consideration. We recommend your attendance.

WORKERS AVAILABLE — IEN S-31

The total of physically handicapped workers who have been put to work by cooperating employers and their State Employment Services has passed 1,300,000 in the past six years. Here is a source to which you can look with confidence for excellent return on your investment in earnest desire to work and in ability to perform. Operators of production-line equipment, assemblers, packers, inspectors, switchboard operators, clerks, accountants, draftsmen are representative.

BINDER FOR IEN — IEN S-32

Sendor Bindery Inc., 129 Lafayette St., New York 13, N. Y., will make and send you a binder to take twelve issues of IEN for $3.10 plain or $3.25 with "Industrial Equipment News" stamped in gold on the front cover. Send your check or money order direct, not through us.

IEN ON MICROFILM — IEN S-33

For about $3.50 you can purchase the twelve issues of IEN for 1950 on 35-mm. microfilm. The service is on a yearly basis by University Microfilm, 311-15 N. First St., Ann Arbor, Mich.

U. S. SAVING BONDS — IEN S-34

BREVITY—Identify by IEN - 9021 if you write the maker

Resist CORROSION in Liquid Volume Measurements

with NIAGARA STAINLESS STEEL METERS

Your problems of metering corrosive liquids are probably solved with Niagara Chemical Meters. Built of type 316 stainless steel, they measure with the same accuracy as the standard bronze meters, best-known in industry for many years. They are simple, practical, reliable. Investigate today!

Please send me complete details on the uses Niagara Chemical Meters offer me for:
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Temp. ..... F Pressure ..... p.s.i.
Flow rate ..... g.p.m.
Company .....
By .....
Address .....

BUFFALO METER CO.
2929 MAIN STREET BUFFALO, N. Y.

BREVITY—Identify by IEN - 9022 if you write the maker

THE spring IS THE THING

AJAX
SPIRAL WOUND GASKETS

The Gaskets with resilience "built-in," to make positive, lasting seals. Made for all types of pipe flanges, pressure vessels, and for boiler manholes, handholes, tube caps, water walls, economizers and other boiler accessories. A trial will end your gasket troubles.

OTHER STANDARD INDUSTRIAL GASKETS

In addition, we offer a complete line of corrugated metal and metal-asbestos gaskets, solid metal, serrated and profile types. Sold universally through Industrial Distributors. Ask your Supply House or write

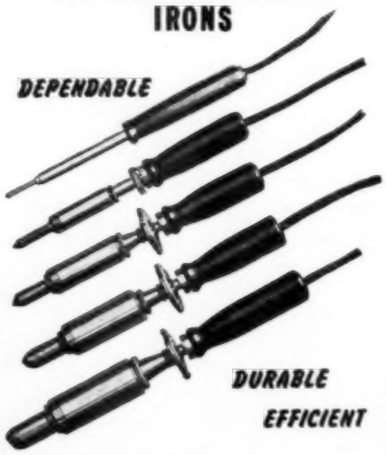
UNITED STATES GASKET CO.
658 N. 10th Street Camden 1, N. J.

Leading Fabricators of "TEFLON" for the Chemical, Process and Electronic Industries.

BREVITY—Identify by IEN - 9023 if you write the maker

American Beauty

ELECTRIC SOLDERING IRONS



DEPENDABLE

DURABLE

EFFICIENT

are sturdily built for the hard usage of industrial service. Have plug type tips and are constructed on the unit system with each vital part, such as heating element, easily removable and replaceable. In 5 sizes, from 50 watts to 550 watts.

TEMPERATURE REGULATING STAND

This is a thermostatically-controlled device for the regulation of the temperature of an electric soldering iron. When placed on and connected to this stand, iron may be maintained at working temperature or through adjustment on bottom of stand at low or warm temperature.

Write for Catalog Sheets, Form No. 204-CP, Dept. SI-2

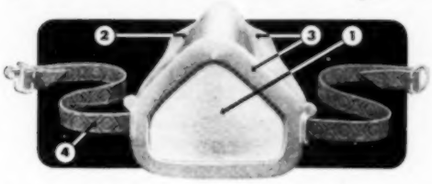
120-3

Since 1894 Always Dependable

AMERICAN ELECTRICAL HEATER CO.
DETROIT 2, MICHIGAN

BREVITY—Identify by IEN - 9025 if you write the maker

4 Reasons why FLEX-A-FOAM (and only FLEX-A-FOAM) provides Dust Protection your workers will welcome and Wear



1. Pure latex washable filter purifies the air of non-toxic nuisance dusts as small as 1/25000 of an inch — yet it's easier to breathe and talk through than an ordinary pocket handkerchief! Out-wears throw-away type filter as much as 100 to 1.

2. Perfectly contoured for self-adjusting fit to every size and shape of face—designed for wear with spectacles or goggles with perfect comfort.

3. Positive-locking frames of polyethelene plastic, so flexible and tough they're unbreakable in normal usage. Complete mask weighs only 1 ounce. Attractively styled to suit the most discriminating wearer.

4. Defiance non-skid, natural rubber head-band with adjustable hook-and-eye fasteners holds mask firm and comfortably snug without tension or hair-pulling.

FLEX-A-FOAM FILTER MASK

Sample $1.40 postpaid

Write for new descriptive folder

THE GOGGLE PARTS COMPANY • CLEVELAND 13, OHIO

BREVITY—Identify by IEN - 9026 if you write the maker

Natural Graphite puts "MORE MUSCLE" into grease!

FOR EXAMPLE:

OPEN GEARS	CONVEYORS	STOKERS
rough treatment	moisture, corrosion	high temperatures, dirt

In Fact: — for all applications where conditions of dirt, dust or moisture prevail.

Greases combined with Dixon *Natural* Graphite provide outstandingly effective lubrication *under even severest conditions* ...where dirt and dust abound; rain and moisture; high pressures; temperature extremes; shock loads.

Dixon *Natural* Graphite is practically indestructible. It withstands extremes of heat and cold. It is insoluble. Inert, it is unaffected by acids and alkalies. Processed under closest laboratory control.

What is your toughest lubricating problem? Tell us the full particulars . . . our technical department will analyze your problem and send you specific recommendations and a sample of the proper Dixon lubricant. No obligation. Write, Joseph Dixon Crucible Co., Jersey City 3, N. J.

DIXON NATURAL GRAPHITE

BREVITY—Identify by IEN - 9027 if you write the maker

NOW! PRE-TIME

Manufacturing — Processing — Test Operations Automatically on Schedule from ONE MINUTE to ONE WEEK!

NEW Cincinnati "MASTER PRO"

This precision-engineered program timer provides up to six circuits for accurate timing *in advance!* Indispensable for positive control of equipment and processes. Self-regulating; develops 24 volts DC and 24 or 115 volts AC to actuate relays, switches, secondary clocks, time recorders. Rugged metal case with attractive gray wrinkle enamel finish. Operates on regular 60 cycle 115 volt AC. Write for complete specifications, or see your CINCINNATI distributor.

Cincinnati

THE CINCINNATI TIME RECORDER CO.

1733 Central Ave., Cincinnati 14, Ohio

Pioneer in Development and Manufacture of Time Control Equipment Since 1896

BREVITY—Identify by IEN - 9028 if you write the maker

CONTROL . . Air fuel ratio unit meters fuel and air to a furnace, kiln

Source: LEEDS & NORTHRUP CO. 4934 Stenton Ave., Philadelphia 44, Pa.

Ratio range referred to the air fed to a furnace or kiln is between 50 per cent deficient and 100 per cent excess when the company's new air-fuel ratio controller is installed. The instrument adjust air flow to fuel flow and can be applied with oil or gas-fired furnaces or installations using the two types of fuel interchangeably. It will operate an electric or a pneumatic control valve in the air line to the furnace. It applies as a single unit or can be used with a temperature controller and a pressure controller in a complete integrated assembly.

An installation employing gas supplies both gas and air through metering orifices connecting into the instrument to produce a pressure differential. If the air-gas flow ratio varies from the setting on the controller housing an electrical impulse is sent to a control relay mounted within the housing. This relay actuates a drive mechanism which positions the valve in the air-supply line, between the instrument and the furnace, to provide the desired ratio of air to gas. The controller is assembled in an instrument housing that fits into a standard panel cutout. Direct remote control of air flow and transfer from manual to automatic control are provided on the front.

BREVITY—Identify by IEN - 9029 if you write the maker

ELEVATOR . . Portable hydraulic table positions work at convenient height

Source: LEWIS-SHEPARD PRODUCTS INC. 194 Walnut St., Watertown 72, Mass.

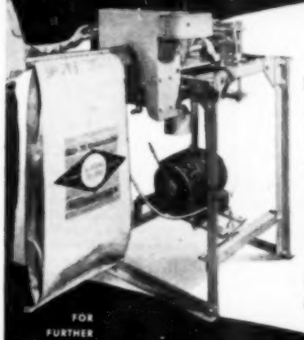
Lift height is to 42 in. above the floor with this new Working Height Lifter. It is operated by a ½-hp. 110-volt 60-cycle ac. motor connected to one of the company's piston-type pumps to deliver oil under pressure to the hydraulic lifting ram. This ram is fitted with a chrome-plated plunger, replaceable bronze guides, spring-loaded packing and a flow regulator valve to control lowering movement at a safe uniform speed either empty or with a load. The platform is available in 36 to 54 in. length and in 32 or 38 in. width. Overall width is 6½ in. greater than the width of the platform. Load rating is to two ton.

Unit loads on skid platforms or pallets can be placed on the platform by means of a fork-lift truck. Then the load can be raised to desired working height and adjusted from there either up or down by operating foot-type switches mounted on a floor plate at the end of a 15-ft. extension cord. The complete unit can be lifted with a fork truck for movement from one location to another.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9030 if you write the maker

BLACK DIAMOND AUTOMATIC CONTROLLED WEIGHT valve bag packer



Accurate • Fast
Simple to operate
Push button control
Material agitating feed hopper
Position of bag on filling tube does not affect final bagged weight
Moderately priced

★ PERFORMANCE GUARANTEED ★

FOR FURTHER INFORMATION WRITE BLACK PRODUCTS COMPANY TO 13513 S. CALUMET AVE. • CHICAGO 27, ILL.

MANUFACTURERS SINCE 1912

BREVITY—Identify by IEN - 9031 if you write the maker

Dependable FIRE PROTECTION

STARTS WITH ANSUL Water-tight CONSTRUCTION

CUTAWAY VIEW ANSUL MODEL 20-B

The new, improved Ansul Model "B" Extinguishers have the greatest fire-killing ratings* ever attained by hand portable fire extinguishers. In addition, WATER-TIGHT CONSTRUCTION, (Exclusive with ANSUL) has resulted in far greater dependability than any other dry chemical extinguisher.

Exclusive Features: Patented Nozzle assures most effective stream pattern. . . . Best results by inexperienced operators. Corrosion resistant construction throughout. Easy on-the-spot Recharging (No tools needed). Ansul "PLUS-FIFTY" Dry Chemical used exclusively. Field tested by thousands of satisfied customers.

Send for file No. 629. You will receive a variety of helpful printed matter. Included is our latest catalog.

**Factory Mutual Laboratory Reports of Examinations and Tests.*

ANSUL CHEMICAL COMPANY

FIRE EXTINGUISHER DIVISION • MARINETTE, WISCONSIN

DISTRIBUTORS IN ALL PRINCIPAL CITIES IN THE U. S. A., CANADA AND OTHER COUNTRIES

BREVITY—Identify by IEN - 9032 if you write the maker

Here's proof . . .

BLU-MOL® cuts costs on TOUGHEST hack sawing jobs

Rail cutting is notoriously rough on hack saw blades. Yet — in test after test, "Blu-Mol" outperforms all other blades. Cuts per blade average 50% to 100% higher — costs tumble. As a result, more and more railroads are making "Blu-Mol" their standard blade.

Let Millers Falls blades help you cut costs on all your industrial hack sawing. Beside "Blu-Mol," there's "Jet-Edge,"* the new *unbreakable* welded-edge power blade . . . "Tuf-Flex,"* finest of all general purpose hand blades . . . and "Blu-Flex,"* the remarkable new *flexible* high speed hand blade. Write for full details.

MILLERS FALLS COMPANY, Dept. P, Greenfield, Mass.

THE WORLD'S BROADEST AND MOST ADVANCED LINE OF METALCUTTING SAWS

MILLERS FALLS TOOLS

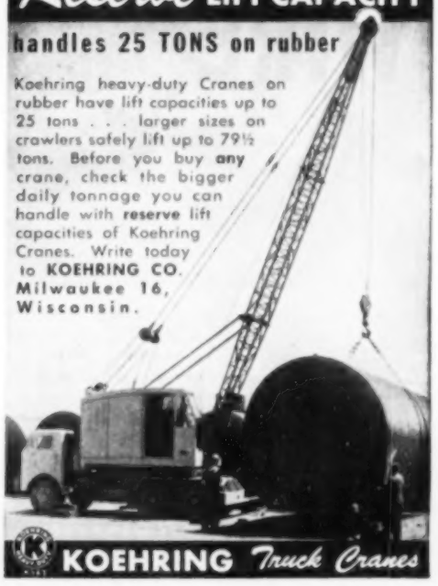
The Mark of Superiority

BREVITY—Identify by IEN - 9033 if you write the maker

Reserve LIFT CAPACITY

handles 25 TONS on rubber

Koehring heavy-duty Cranes on rubber have lift capacities up to 25 tons . . . larger sizes on crawlers safely lift up to 79½ tons. Before you buy **any** crane, check the bigger daily tonnage you can handle with **reserve** lift capacities of Koehring Cranes. Write today to **KOEHRING CO.** Milwaukee 16, Wisconsin.



KOEHRING *Truck Cranes*

BREVITY—Identify by IEN - 9034 if you write the maker

for easier...cleaner glue handling at less cost! ALEMITE VERSATAL PUMPS

Air-operated Versatal Pumps deliver glues and adhesives directly from bulk storage to your point of application. Saves time and work. Ends troublesome handling and transferring of materials.

Hydraulic pressures deliver materials through as much as 1000 feet of hose or pipe, serve up to six spray heads. For FREE book of ideas on how Alemite Versatal Equipment can help solve your material handling problems, write Alemite, Dept. B-91, 1850 Diversey Pkwy., Chicago 14, Ill.

ALEMITE Versatal

Another Product of Stewart-Warner

BREVITY—Identify by IEN - 9035 if you write the maker

SPECIAL FIXTURES

speed multiple inspection with Brown & Sharpe Electronic Equipment

HERE'S how you can get faster, more accurate gaging of small parts — at low cost. Special gaging fixtures, custom-built by Brown & Sharpe, in combination with Brown & Sharpe Electronic Amplifiers, check all critical dimensions quickly, to tolerances of .00001". Applicable to gaging thickness, length, angle, parallelism, diameter, taper, or combinations of several dimensions. If desired, fixtures may be ordered for use with your present Brown & Sharpe Amplifiers. For details, write Brown & Sharpe Mfg. Co., Providence 1, R. I., U. S. A.

We urge buying through the Distributor

BROWN & SHARPE

BREVITY—Identify by IEN - 9036 if you write the maker

PRODUCT-PROVED WIRE

CONTINENTAL STEEL CORP. STEEL CONTINENTAL WIRE KOKOMO, IND.

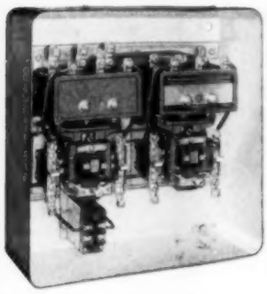
● The worth of Continental wire has been *proved* in the products of hundreds of leading manufacturers. Continental wire is uniform in temper, uniform in coating. Whether your need is for a rust-resistant wire that can stand up under difficult forming operations . . . or for a shaped wire to provide smarter-looking, longer-lasting trim . . . Continental wire can help you build a better, more profitable product. Write Continental at Kokomo.

CONTINENTAL STEEL CORPORATION

BREVITY—Identify by IEN - 9037 if you write the maker

MOTOR CONTROL . . Magnetic starter for motors with two parallel windings

Source: ALLEN-BRADLEY CO.
1312 S. 2nd St., Milwaukee 4, Wis.



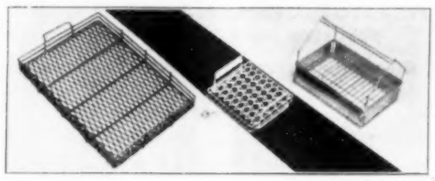
Bulletin 736 designates new combination of two of the company's across-the-line starters with a pneumatic timing mechanism mounted below one of the starters and operated by this starter's solenoid plunger. Pressing the "start" button closes the first starter circuit to energize one of the two parallel motor windings and start the timer. Following the predetermined interval established by the timer, the second starter is energized to supply line current to the motor through both windings.

This type of motor starting prevents objectionable current surges. It is particularly suited where reduced-voltage starting is necessary because of power-company limitations. Five sizes cover a range between 10 and 400 hp. for 220, 440 and 550-volt 50/60-cycle circuits.

BREVITY—Identify by IEN - 9038 if you write the maker

HANDLING . . Process work baskets, plain, coated, mesh, expanded metal

Source: COLEMAN-PETTERSEN CORP.
2121-25 St. Clair Ave., Cleveland 14, Ohio



The company announces availability of a new line of baskets in specified sizes of wire, wire mesh, expanded metal, sheet metal or any combination in welded assembly, plain or coated with various types of plastics or rubber. The baskets also can be plated, Parkerized, Bonderized or copper finished.

BREVITY—Identify by IEN - 9039 if you write the maker

PRESSES . . Schematic diagrams show action of rubber pad press dies in bulletin

E. W. Bliss Co.
1373-77 Raff Road S. W., Canton 10, Ohio

Operating principle of rubber-pad forming is illustrated and described in new 4-page "Presses for Rubber Pad Forming of Aircraft Parts". Also described is how to use the same press for conventional drawing operations. A table summarizes presses from 500 to 1,500 ton. Ask for Bulletin 39.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9040 if you write the maker

DAV-SON CORK-BACKED BULLETIN BOARDS

DAV-SON indoor and outdoor style Bulletin Boards provide attractive displays for up-to-the-minute announcements and posters. Your choice of hardwood or metal frames, with or without locking glass doors, illuminated or non-illuminated.

"THE SAFETY DIRECTOR"

Flashing display is a constant warning to employees to avoid accidents. Changeable letters permit timely safety messages to be set up as often as required. Definite improvement in safety records has been noted in plants using "The Safety Director."

Write for complete information regarding DAV-SON — Cork Bulletin Boards and Directories and the famous "Safety Director."

DAV-SON

Ask for Bulletin "A"

A. C. DAVENPORT & SON, INC.
ESTABLISHED 1932
311 N. DESPLAINES ST., CHICAGO 6, ILL.

BREVITY—Identify by IEN - 9041 if you write the maker

AMES HAS THE BETTER ANSWER to your Long Range Problem

MODEL NO. 2822

Ames Long Range Dial Indicators are doing a better job on those difficult quality control jobs which require long range close tolerance inspection. Problems such as those involving measurement of slide motions, cam travel, or checking the depth of recesses and penetrations are easily and accurately solved with Ames Long Range Dial Indicators. Models are available having ranges from ½" to 12". Some dials graduated in .001", some in .0005". Other models graduated in .0001". Write for detailed information or send your problem to Ames Engineering Department. There is an Ames Gauge or Indicator to solve practically any measuring problem controlling quality of process or product.

Representatives in principal cities B. C. AMES CO. 77 Ames Street Waltham 54, Mass.
Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

BREVITY—Identify by IEN - 9042 if you write the maker

JABSCO SELF PRIMING PUMPS

Patented and Patents Pending

the pump with the DUPONT NEOPRENE impeller (oil resistant)

BRONZE, STAINLESS STEEL & IRON CONSTRUCTION — CAPACITY TO 50 GALLONS PER MINUTE

1 MORE CAPACITY—for its weight, size and price.
2 SELF-PRIMING—starts instantly with high suction lift.
3 ONE MOVING PART—tough, long-lived.
4 GEARLESS—impeller outlasts metal gears.
5 TROUBLE FREE—simple construction.
6 ECONOMICAL—low cost — low maintenance.

LIQUID TRANSFER AND CIRCULATING FOR ALL INDUSTRIES

JABSCO PUMP COMPANY
2031 N. Lincoln Street • Burbank, California

BREVITY—Identify by IEN - 9043 if you write the maker

Moving or Storing is Rapid, Convenient and Inexpensive with

IRONBOUND SEMI-LIVE SKID PLATFORMS

Ruggedly built with capacities up to 2500 lbs. These units are quickly made mobile with the use of low cost lift jacks . . . One of the methods that Ironbound engineers use to increase production and conserve space at low cost.

SEMI-LIVE SKID WITH BOX TOP

. . . permanently attached or removable. Also available with many other superstructures to "Short-Haul" your products thru production or into storage. Useful in hundreds of spots in every plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

IRONBOUND BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

BREVITY—Identify by IEN - 9044 if you write the maker

ABSOLUTE SECURITY for BOLTED ASSEMBLIES

—regardless of VIBRATION or LOAD

Ordinary nut carries the load — PALNUT keeps it tight with DOUBLE-LOCKING SPRING ACTION

Powerful spring tension (A-A) is exerted upward on the bolt threads and downward on the ordinary nut, while slottedjaws(B-B) close in and grip the bolt like a chuck. Nut can not loosen—bolt can not back out.

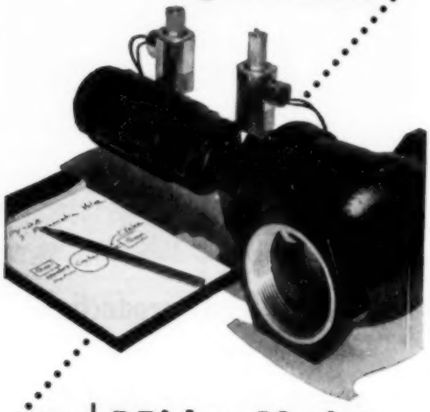
Write for samples and literature

THE PALNUT COMPANY
59 Cordier St., Irvington 11, N. J.

PALNUT LOCK NUTS

BREVITY—Identify by IEN - 9045 if you write the maker

Compressed air controls high vacuum



and DPi has 10 sizes of valves to do it

DPi NOW OFFERS pneumatically operated valves in the smaller sizes, as well as the larger sizes previously available.

This means that now, with DPi's complete line of valves ranging in size from 3" to 32", you're assured of instant, sure-seal control, for any size high vacuum system.

In the new smaller-sized pneumatic valves, compressed air at 50 p.s.i. provides a positive seal that can be put into action instantly by electric controls, and will hold indefinitely. The small combined size of valve and operator means easy installation where space is at a premium. You get convenient, automatic operation for your high vacuum system . . . enjoy the advantages of both compressed air and remote electric control.

These new valves are another step in DPi's continuing program to make industrial applications of high vacuum as convenient and automatic as possible. As specialists in the design and building of high vacuum installations—whether it be a special valve or a complete system—DPi invites your inquiries. Write to *Distillation Products Industries,* Vacuum Equipment Department, 761 Ridge Road West, Rochester 3, N. Y. (Division of Eastman Kodak Company).

DPi high vacuum research and engineering

Also . . . vitamins A and E . . . distilled monoglycerides . . . more than 3400 Eastman Organic Chemicals for science and industry

BREVITY—Identify by IEN - 9047 if you write the maker

PULLING . . Conversion parts for company's screw type pulling tools

Source: OWATONNA TOOL CO.
371 N. Cedar St., Owatonna, Minn.

Illustrated is a new conversion set to apply hand-hydraulic power to the company's previously developed screw-operated pulling tools. A major part of the set is the hand-hydraulic jack, previously described IEN-4738-51. The parts take the place of the original screw in the pulling tool for direct application of hydraulic pressure to 17½ ton in a pulling operation. Since the pressure medium is non-compressible oil there is no danger of "jumping" when a load pulls free and sudden pressure release occurs as a result.

BREVITY—Identify by IEN - 9048 if you write the maker

MAGNET . . Permanent magnet base and arm positions gage on a machine

Source: PASSING EYE INC.
6331 31st Ave., Kenosha, Wis.

The base in this new permanent magnet measures 3½ by 1¼ in. and stands 1 in. in height. It exerts a 30 to 35-lb. pull when positioned on a ferrous surface. It supports a ¼-in. arm measuring 6 in. in length to which a gage or indicator can be secured. Erick Magna-Holder is the trade name. List price is about $3.

BREVITY—Identify by IEN - 9049 if you write the maker

PUMP . . Hand operated unit to dispense liquids from containers

Source: K-P MFG. CO.
1224-28 Linden Ave., Minneapolis 3, Minn.

Model H-10 is a new 15-gpm. hand-operated rotary pump for application through the bung opening in a drum. The pump is equipped with a 42-in. length of ¾-in. suction pipe and with a bung screw to fit a 1½ or 2-in. drum or tank opening.

It delivers through a non-drip spout, has suction-lift capacity of about 10 feet. The spout is threaded for a hose connection. Typical fluids that can be handled include gasoline, kerosene, lubricant, petroleum distillate.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9050 if you write the maker

For dispensers, merchandise displays, visible hoppers, lighting fixtures, sight feeders, meters, columns or any other applications, DUNBAR offers you a wide variety of cylinder sizes in economical quantities. Or we will fabricate blown glass cylinders to your specifications. We invite your inquiries. Write Dept. 967 for our Glass Cylinder catalogue No. C-51.

Dunbar Glass Corporation
DUNBAR, WEST VIRGINIA
NEW YORK • CHICAGO • LOS ANGELES

BREVITY—Identify by IEN - 9051 if you write the maker

MOVING MOUNTAINS

with Spencer Vacuum

Yes — Spencer Vacuum is moving chemicals, hot materials and just plain debris by the ton. But the biggest mountains of industry are plant housekeeping and sanitation. Whether it's 500 acres in a chemical plant to be cleaned every night, or the few specks of dust that cause rejects in ceramic and instrument plants — Spencers are doing the job with less man power.

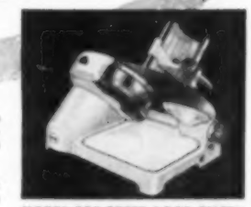
Ask for Bulletin No. 144—it describes 132 applications.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD
439-M

BREVITY—Identify by IEN - 9052 if you write the maker

BREVITY—Identify by IEN - 9053 if you write the maker

Cost-Cutter FOR INDUSTRIAL CAFETERIAS



DEPENDABLE. This slicer is precision-built to last. Sharpening stones, that swing clear when not in use, keep blade keen.

SAFE. Operator is protected at all times. Light on switch shows when slicer is running. Adjustment for knife wear keeps it safe.

EASY TO CLEAN. Gleaming white finish wipes clean in a jiffy. Guards are removed without tools.

MODEL 805 SPEED-LOAD SLICER
The perfect all-around slicer for industrial cafeterias. You change products fast. Slice vegetables, cheese, boneless hot or cold meats, poultry. Vegetable chute available for fast slicing of potatoes, radishes, etc.

U.S. BERKEL *Write* for Illustrated Literature on Slicers • Choppers • Meat Saws • Tenderteak Machines

U. S. SLICING MACHINE COMPANY, INC.
901 Berkel Building, La Porte, Indiana

BREVITY—Identify by IEN - 9054 if you write the maker

PILLOW BLOCK BALANCING WAYS

Built in
1,000
2,000
5,000
10,000
20,000
Capacities

Especially suited for large diameter work, as a sub-base can be made of proper height to give necessary clearance for work. Anderson Pillow Block Balancing Ways are precision built with chilled iron discs which rotate with minimum friction on sensitive special bearings. Many manufacturers have endorsed them for efficient, static balancing.

ROCKFORD Anderson BROS. MFG. CO. ILLINOIS

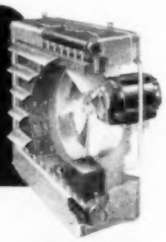
Write For Bulletin No. 9-35

ANDERSON BROS. MFG. CO., Rockford, Ill.

Balancing Ways, Roto Checkers, Hand and Power Scrapers, Spotters, Hand and Power Hydraulic Straightening Presses.

BREVITY—Identify by IEN - 9055 if you write the maker

Less Overhead When You HEAT Over Head with...



DUNHAM UNIT HEATERS

Why let ineffective heat distribution run up fuel bills—and overall operating expenses?

Why not look into these Dunham Horizontal Discharge Unit Heaters—see how they give you heat where you need it most . . . quietly.

Dunham's resiliently mounted motors; slow-speed fans; and sturdy one-piece fan shroud—all combine to direct air efficiently through individually adjustable louvers.

For complete information about long-lasting, expense-saving Dunham heaters, WRITE FOR BULLETIN 1301-11.

DUNHAM

C. A. Dunham Co.
400 W. Madison St., Chicago 6, Ill.
In Canada:
C. A. Dunham Co. Ltd., Toronto
In England:
C. A. Dunham Co. Ltd., London

HEATING SYSTEMS AND EQUIPMENT

BREVITY—Identify by IEN - 9056 if you write the maker

FREE COST-CUTTING FACTS!

Booklet describes unusual multi-purpose thermostat

If your processes involve control of heat, humidity, vapor level, radiant heat, pressure or other variables dependent on heat, it will pay you to investigate the fast, accurate, sensitive action of Fenwal low-cost THERMOSWITCH thermostats. Send for free booklet describing how Fenwal single-metal shell expands or contracts instantaneously with temperature changes, making or breaking totally enclosed electrical contacts.

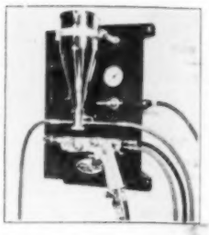
Fenwal **THERMOSWITCH**®
The Precision, Multi-Purpose, Thermostat Control
SENSITIVE...*but only to heat*

FENWAL INC., 79 Pleasant St., Ashland, Mass. MAIL TODAY
111 South Burlington Ave., Los Angeles 4, Cal.
Temperature Control Engineers
Please send me the Fenwal booklet "Everything you want in a thermostat."
Name ..... Position .....
Company .....
Street .....
City ..... Zone ..... State .....

BREVITY—Identify by IEN - 9057 if you write the maker

METAL SPRAYING . . Torch and hopper to apply and fuse powdered metals

Source: WALL-COLMONOY CORP.
19343-47 John R St., Detroit 3, Mich.



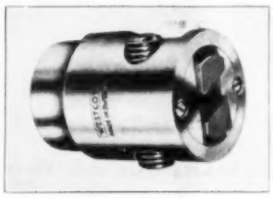
Model B is new design of the company's Spraywelder equipment, previously described IEN-S18-47, to deliver powdered metals and then to fuse the sprayed coating permanently in place. The equipment is employed for hard facing and also to apply overlays of powdered metals such as aluminum, brass, copper, stainless steel, zinc.

Three hose lines connect to the torch to carry oxygen, acetylene and dry compressed air, the latter at 75 lb. or more. The oxygen and acetylene are delivered to the torch tip where they maintain a flame as in a standard welding torch. The air passes hthrough a trigger-controlled valve to issue from the rear of the torch through a hose line to the feeder at the bottom of the powdered metal hopper. Another line from the feeder conveys the powder suspended in the air stream back to the torch for delivery through the gas flame in the nozzle. When the powder has been sprayed its feed is shut off and operation of the torch is continued to permanently bond the sprayed metal in place. List price is $385.

BREVITY—Identify by IEN - 9058 if you write the maker

CHUCK . . Two jaw design in three sizes to ½, ¾, and 1 inch

Source: WESTCOTT CHUCK CO.
P. O. Drawer 270-A, Oneida, N. Y.



The two jaws close in laterally to form an interlocking V-grip on the straight shank of a drill when a double-thread screw is turned in tightening direction in this new chuck. It is made for the company in Sweden to a design the same as the company's former "Little Giant" model which was discontinued several years ago.

Three sizes start at 0 and are maximum at ½, ¾ and 1 in. in shank capacity. A T-handle operating wrench is supplied with each unit. Morse taper arbors and parts are available.

BREVITY—Identify by IEN - 9059 if you write the maker

ENGINEERING . . Textbook on mechanics and strength of materials features elementary treatment

John Wiley & Sons Inc.
440 Fourth Ave., New York 16, N. Y.

Algebra and arithmetic only are required to understand the mathematics in new textbook, "Simplified Mechanics and Strength of Materials". The 230-page book, list price $4, has been written for practical men. It contains illustrative examples and tables that accompany the subjects presented.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9060 if you write the maker

DON'T GUESS! TEST!

Use STICHT-TACHOMETERS

UNIVERSAL TYPE U
With 5 Ranges

Direct, accurate, instant readings. Ranges available: 30-12,000 RPM, 45-18,000 RPM, 60-24,000 RPM, 120-48,000 RPM, all in 5 steps. Send for Bulletin No. 750 and condensed Tachometer Bulletin No. 1046.

Stationary Tachometers furnished to read RPM, Feet Per Minute, Yards Per Minute or to suit many other applications.

HERMAN H. STICHT CO., INC.
Tachometer Headquarters
27 PARK PLACE. NEW YORK 7, N. Y.

BREVITY—Identify by IEN - 9061 if you write the maker

STOP THE PRESSES*!

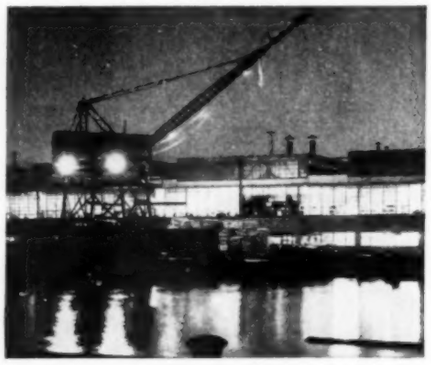
. . . and install GEROTOR

hydraulic pumps for improved performance

* Punch presses . . . baling presses . . . straightening presses . . . piercing presses . . . assembly presses . . . plastic presses . . . any hydraulically operated presses work better with GEROTOR Hydraulic Pumps. Whether you build them or maintain them, specify GEROTOR Pumps . . . for pressures up to 1200 p.s.i. continuous, 1500 intermittent . . . deliveries from .4 to 40 g.p.m.

GEROTOR MAY CORPORATION
P.O. Box 86, Baltimore 3, Md.

BREVITY—Identify by IEN - 9062 if you write the maker



How to boost production with round-the-clock lighting ...via Graybar

Industry, today, faces the dual responsibility of both defense and peacetime production. The need for good round-the-clock plant lighting is now more important than ever. It lets you add efficient production during night time hours to daytime operating schedules . . . allows you to increase production potential at minimum cost . . . helps you improve employee efficiency and reduce spoilage even on normal daytime shifts.

A COMPREHENSIVE LIGHTING SERVICE

A practical lighting system for your own plant can easily be worked out with the aid of your local Graybar office, for we have planned and supplied plant and office lighting systems of every type. That's why, when you order via Graybar, you know the light will be right for the job—the *right* unit . . . the *right* quality . . . the *right* characteristics.

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A SINGLE SOURCE FOR ALL YOUR NEEDS

Whether the job is large or small, remember that you can order *all* of the lighting units, lamps, and wiring materials required via Graybar. Our nation-wide network of offices and warehouses helps us give you the fastest possible service. *Graybar Electric Company, Inc. Executive Offices: Graybar Building, New York 17, N. Y.*

190-129

Avoid electrical delays — plan ahead . . . via GraybaR

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Those neat pleats in a lady's skirt start with a Riegel paper made from white manila rope. Two identical paper patterns are creased by hand, the cloth is folded between them, and a steam press finishes the job. The patterns last for months, due to the high strength of the rope fibers.

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DO THE WORK OF 2

DOUBLE THE CAPACITY of your Charg-O-Matic "KX" or "HX" single-circuit battery charger—at a fraction of the cost of an additional charger! Hertner's new Double Duty Charge Control Unit, mounted on your Charg-O-Matic, makes this easy.

You plug in two truck batteries **at once**. Each is individually charged. When the first is recharged, it is automatically disconnected and the same cycle is repeated for the second. When both are fully charged, motor generator automatically shuts down, with no further attention. Begin recharging at end of a day. By tomorrow morning you'll have **two** battery-powered trucks back in operation.

Specify a Double Duty unit when ordering your new "HX" or "KX" Charg-O-Matic, or mount a Double-Duty Unit on your present "HX" or "KX" Charg-O-Matic (if manufactured after Dec. 1, 1949). Either way, you'll **double** the usefulness of your battery-charging equipment.

For additional information on the "HX" or "KX" Charg-O-Matic with Double Duty Unit call in your nearest electric truck representative, or write direct for bulletin No. 201R.

THE HERTNER ELECTRIC COMPANY
12690 ELMWOOD AVE. • CLEVELAND 11, OHIO
A General Precision Equipment Corporation Subsidiary
MOTORS • MOTOR-GENERATORS • GENERATOR SETS
Representatives in Principal Cities

BREVITY—Identify by IEN - 9066 if you write the maker

DETECTO SCALES

There's a precision-accurate Detecto Scale for your specific weighing and counting need. The Detecto helps increase production, yet assures you maximum accuracy by making slightest weight discrepancies immediately visible.

DETECTO-GRAM NEW PACKING SCALE

Another Detecto-Gram Scale for weighing your ingredients accurately. New Model #8800 brings to your heavy duty weighing jobs the mechanical accuracy previously found only in small scales. Capacity ¼ ounce to 60 lbs.

Write for Literature

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MAKERS OF FINE SCALES SINCE 1900
549E PARK AVENUE • BROOKLYN 5, N. Y.
SCALE ENGINEERS IN ALL PRINCIPAL CITIES

BREVITY—Identify by IEN - 9067 if you write the maker

MARKING . . Roll attachment prints upon containers on conveyor

Source: AMERICAN MARKING CORP.
400 Hillside Ave., Hillside, N. J.

Cadet is a new printing attachment that mounts horizontally or vertically in connection with a conveyor over which containers and packages are moving. It takes ink from a feed roll that holds a day's supply for transfer to Baselock type or adhesive-backed dies that apply on a printing roller. Contact between this roller and the object to be marked causes the inked type to be rolled over the surface.

A device recenters the roller in multiples of 90 or 120 degrees of rotation after printing for accurate positioning of the imprint. Random location can be obtained by removing the recentering device. Four sizes will print from 9 to 14 in. in length by ⅝ to 3 in. in height.

BREVITY—Identify by IEN - 9068 if you write the maker

REFRACTORY . . Liquid material to lay and surface coat fire brick

Source E. F. DREW & CO.
15 E. 26th St., Room 2015-A, New York 10, N. Y.

List price about
$5.00 per gallon

Refractory Coating designates a new liquid material for dip application in laying up fire brick and to spread with a paint brush for surface coating in a furnace subject to temperatures between 1,900 and 3,000 deg. F. Five gallons of the liquid will cover 100 sq. ft. of brick with two coats.

The liquid dries to present a hard surface finish, essentially an integral part of the brick, to expand and contract uniformly under changing temperature. The coating prevents slagging, spalling, abrasion and disintegration of the brick. Packaging is in 5-gal. steel non-returnable pails.

BREVITY—Identify by IEN - 9069 if you write the maker

WELDING . . Arc electrode holder in three sizes rating 200 to 500 amperes

Source: EMPIRE PRODUCTS INC.
P. O. Box 98-F, Cincinnati 36, Ohio

Cam-Lok trade names a new electrode holder with lever-operated jaws and cam action to eliminate need for springs. The jaws are positioned so the welding electrode need not be bent. The jaw-opening handle fits the operator's hand. Handle and shank are insulated.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

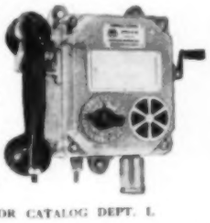
BREVITY—Identify by IEN - 9070 if you write the maker

U.S.I. SOUND POWERED

assures dependable communication

"BOMBS AWAY"

(in enemy language)



Could mean no communication in your plant . . . Any communication system depending upon outside power supply is unusually vulnerable.

Investigate the permanent, or emergency, systems offered through U. S. I. sound powered telephones.

WRITE FOR CATALOG DEPT. L

UNITED STATES INSTRUMENT CORPORATION
SUMMIT • • • NEW JERSEY

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Quickly and Easily Measures . . .

COMPLETE LOAD-VISUALIZER KIT as shown above—list price $170.00 (with 200-amp current transformer).

VOLTS, AMPERES, WATTS, VARS, AND POWER FACTOR

The AF-2 has a-c current ranges from 0-2.5/5/25/50 amps, up to 1000 amps with split-core transformers. Voltage ranges are 0-150/300/600. It's available for immediate shipment. See your G-E distributor, or write General Electric, Schenectady 5, N. Y.

602-218

GENERAL ELECTRIC

BREVITY—Identify by IEN - 9072 if you write the maker

Drills to 3" Diam. in Wood

Milwaukee **HOLE-SHOOTER**

3-speed "Right-Angle" Drill has many applications

See complete Kit below

No other "Right-Angle" drill made, at any price, gives you suitable speeds and power for drilling in wood, metal, masonry, concrete, tile. Hole-Shooter's time-saving performance in close quarters alone, soon pays its cost. Wt., only 9 lbs. . . . full ½ H.P. Top quality . . . an amazing value. Write—Milwaukee Electric Tool Corp., 5360 W. State St., Milwaukee 8, Wis.

Milwaukee Tri-Speed Kit "412" includes . . .

1. S-412 ½" HOLE-SHOOTER, ball and roller bearings, Jacobs geared chuck, 450 R.P.M.
2. *2-speed "Right-Angle Drive" — low speed, 500 R.P.M.; high speed, 675 R.P.M.
3. 3 special bits — ¾", 1⅛", 2-9/16".
4. Special wrench for speedy adjustment of "Right-Angle Drive" and chuck.

Complete Kit **$87.00**

**Pat. Pending*

Milwaukee **QUALITY TOOLS**

BREVITY—Identify by IEN - 9073 if you write the maker

HYSTER KARRY KRANE

- ✓ Pneumatic tires—works anywhere indoors or outdoors.
- ✓ Adjustable boom—5 positions.
- ✓ Trunnion steering, maximum maneuverability.
- ✓ Speeds up to 10 mph in either direction.
- ✓ 10,000 lbs. hoisting and transporting capacity.

HYSTER KARRY KRANE is a terrific cost-cutter in lifting and moving heavy or bulky materials up to 10,000 pounds in weight.

Typical users include—Automobile factories—Contracting and general construction firms—Heavy machinery distributors—Factories—Food manufacturers—Foundries—Mining—Motor freight lines—Public utilities—Railroads—Warehouse and storage firms—and many other industries where the lifting and transporting of heavy loads is of prime importance.

Ask your Hyster dealer for demonstration.

HYSTER® COMPANY
Three Factories
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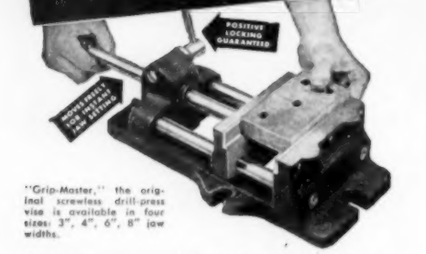
1816 North Adams Street, Peoria 1, Illinois
1016 Meyers Street, Danville, Illinois

BREVITY—Identify by IEN - 9074 if you write the maker

Grip-Master
SCREWLESS-VISE
GRIPS WITH
SPEED AND EASE



"Grip-Master," the original screwless drill-press vise is available in four sizes: 3", 4", 6", 8" jaw widths.

● The instantaneous and effortless setting, and guaranteed positive locking of the amazing "Grip-Master" *Screwless* Vise add up to new *savings* on hundreds of drill-press and production line operations. "Grip-Master" also makes an ideal base-structure for jigs and fixtures. Hammer blows will not budge its tenacious grip obtained by an effortless press on the locking-lever. Built-in parallels level work instantly. Write today for full information and prices on the "Grip-

NATIONAL MACHINE TOOL COMPANY
DEPT. 171-J RACINE, WISCONSIN

BREVITY—Identify by IEN - 9075 if you write the maker

BETTER LIGHT
for Machine Tools,
Assembly and Inspection Benches
LOCALITES
The Finest of All Localized Lighting Units

MODEL 099-PX-412
Overall length 35½". Three instantly adjustable joints. Reflector accommodates 100 watt A-21 medium screw base lamp.
$13.28 EACH in pkg. of 4
Single Units $16.60 ea.

- **All Wiring Fully Enclosed** — completely protected from wear or insulation damage from oils and fumes
- **Adjusta-tension Joints** — tension easily adjusted for freedom of arm movement to suit worker and job
- **Universal Base** — mounts on outlet box or directly on machine or bench
- **Baked Enamel Finish**—exterior, Vista Green—Reflector interior, high temperature White

WRITE FOR COMPLETE CATALOG of Localized models with various type reflectors, arms and bases for every industrial use.

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FOSTORIA, OHIO
Localites are available through selected distributors everywhere.

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Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 9076 if you write the maker

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BREVITY—Identify by IEN - 9077 if you write the maker

MIXING . . Pressure disperser for manufacture of greases, emulsions

Source: CHAFFEE DESIGN & MFG. CO.
664-68 Main St., East Aurora, N. Y.

Products to be mixed by this new motor-driven machine are introduced into the cylindrical housing through connections at the motor end. They are picked up inside the housing by a screw which moves them to the first of a series of perforated plates alternating with hardened shearing knives mounted on the same rotating shaft as the pressure-feed screw. The materials are forced through the perforations and are sheared by the knives in alternating action that produces a homogenous product at the outlet connection.

Two designs in the line are for pilot use and production. Identical results can be obtained by employing plates carrying the same perforations in both units. The pilot model has 1½-in. pipe-threaded inlet and outlet. Two inlets at the rear of the production assembly measure 3 in. in pipe size. The same size outlets are provided at the opposite end. Drive is by a 1½-hp. motor operating at 1,800 rpm. in the first case. A 7½-hp. motor operating at 1,800 or 3,600 rpm. drives the larger unit. Capacities are 6,200 and 24,000 lb. per hour. Overall dimensions are about 33 by 14 by 14 in. and 54 by 14 by 22 inches.

BREVITY—Identify by IEN - 9078 if you write the maker

WOOD WORKING . . Shaper cutter is undercut and radial form relieved

Source: MOAK MACHINE & TOOL CO.
2545-49 Conner, Port Huron, Mich.

Form relief to keep true shape throughout its life is combined with an undercut at the base of each blade in this new shaper cutter. The unit is made of 18-4-1 high-speed steel, hardened and ground. Three sizes range from 3½ to 4 in. in the cutting circle and have ¾ to 1⅛-in. center holes. Face width is ¾, 1 and 1¼ in. in the three sizes.

The cutter is available in single units and complete sets. Outlines and dimensions are detailed with list prices in a new 4-page bulletin, "Moak Speedikut Shaper Cutters".

BREVITY—Identify by IEN - 9079 if you write the maker

DRIVES . . Book of standards on selection and rating of multiple V-belt drives

Multiple V-Belt Drive Association
5-9 W. Madison St., Chicago 2, Ill.

The Association in cooperation with the Rubber Manufacturers Association has issued a new 16-page "Engineering Standards" booklet that lists at 50 cents. The booklet covers multiple V-belt drives, sheaves and belts, service factors, selection, horsepower rating tables, groove dimensions.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 9080 if you write the maker

Need clean, even heat?

Here is pure, uniform electrical heat—radiated from a pane of glass!

Smokeless, dustless, flameless radiant heat from a paper-thin aluminum grid fused to the back of a strong, tempered glass panel.

Think of the places in your production process—in your *product itself*—where heating or drying can be done faster, easier, safer, cheaper with this remarkable new unit. Want to know more? Send today for our technical folder. Write to Dept. IEN-9.

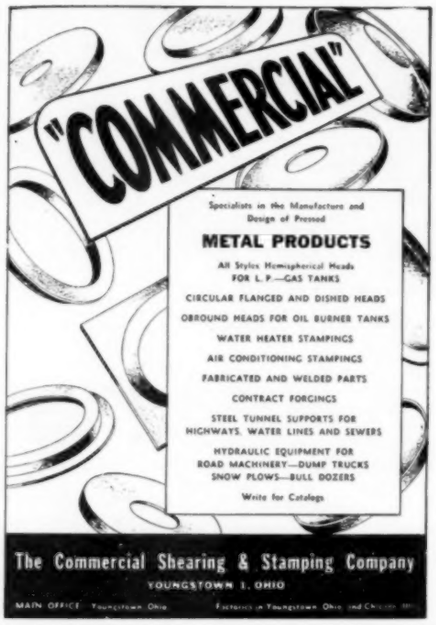
CROSS SECTION
Grid
Glass
Terminals

RA-GRID HEATER PLATE
9 sizes: Ranging from 6 x 14" to 16 x 28"
Thickness: ¼"
Heat: Up to 300°F.
Voltage: 230 max. for 16 x 24" plates
Connections: Two terminals for connection of wires

RA-GRID HEATER PLATES
BLUE RIDGE GLASS CORPORATION • KINGSPORT, TENN.

BREVITY—Identify by IEN - 9081 if you write the maker

"COMMERCIAL"



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All Styles Hemispherical Heads FOR L. P.—GAS TANKS
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The Commercial Shearing & Stamping Company
YOUNGSTOWN 1, OHIO
MAIN OFFICE Youngstown, Ohio Factories in Youngstown, Ohio and Chicago, Ill.

BREVITY—Identify by IEN - 9082 if you write the maker

NEW MIDGET CHUCK*
For ANGLE or SNAKE DRILLING

Now in production is this amazing, practical, NEW RITMAR CHUCK. SAVES MONEY . . . REDUCES INVENTORY INVESTMENT. TRY SOME and CONVINCE YOURSELF!

*Pat. Pending

✓ POSITIVE GRIP . . . LESS DRILL BREAKAGE
✓ LESS TRIPS TO THE TOOL CRIB
✓ USES BROKEN DRILLS or DRILLS with Short Shank
✓ NO MORE SPECIAL DRILLS . . . NO MORE BRAZING

AVAILABLE in DRILL SIZES from a No. 6 to No. 50. FOR DRIVING UNITS with 10/32, 1/4—28, 5/16—24 threads.

For further detailed information, write or wire
RITMAR CO.
Designers & Manufacturers of Special Tools
183 New York Ave., Huntington, L. I., N. Y. Huntington 7135

BREVITY—Identify by IEN - 9083 if you write the maker

Speed Up Production
Secure Greater Uniformity
Save Time, Labor, Fuel

with more than 2,000 manufacturers now using

ROSS INDUSTRIAL AIR SYSTEMS
DRYING . . . . . BAKING
CURING . . . . . COOLING
HEAT TREATING . . . AGING
CONDITIONING

ROSS WEB OR PARTICLE DRYING Systems—batch and continuous types in wide use for drying processes in such industries as ceramics, chemicals, drugs, pulp and paper, plastics, rubber, textiles, cork products, insulating materials, thread, floor covering, wall board and many others. Catalogs on request.

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MANUFACTURERS OF AIR PROCESSING SYSTEMS
444 MADISON AVENUE NEW YORK 22, N. Y.
CHICAGO • DETROIT • BOSTON • LOS ANGELES • MONTREAL • LONDON

BREVITY—Identify by IEN - 9084 if you write the maker

Now—have a spic and span floor around machines!

Here's a flooring tip for the man who likes his plant to look as neat as his office.

Tuff-Tex® is a unit-laid, plastic-asbestos tile which is *highly resistant to greases and oils.*

It withstands heavy traffic, has high flexural strength, can take floor vibrations. It also resists impact from dropped objects.

Left unwaxed, Tuff-Tex provides safe, non-slip footing.

Quickly installed, easily cleaned, it is proving a "natural" for commercial kitchens, laboratories, service stations and such places as well as for factory areas.

FREE literature shows the wide range of colors. Write THE TILE-TEX DIVISION, The Flintkote Company, 1234 McKinley St., Chicago Heights, Ill.

AND FOR THE OFFICE, USE TILE-TEX®... THE QUALITY ASPHALT TILE

TILE-TEX FLOORING PRODUCTS

REGISTERED TRADEMARK, THE FLINTKOTE COMPANY

BREVITY—Identify by IEN - 9085 if you write the maker

PANGBORN Hydro-Finish gives better tool room results...

in a fraction of the time!

SIMPLIFY the manufacture and maintenance of tools, dies and molds with versatile Pangborn Hydro-Finish. It reduces usual costly handwork and produces a surface virtually free from directional grinding lines.

And on the production line, use Hydro-Finish to eliminate many tedious finishing operations. It reduces cost and time involved in buffing. It lessens fatigue failure and cuts manufacturing costs.

Hydro-Finish is the new, versatile impact blasting process that uses a fine mesh abrasive suspended in water. Tolerances are held to .0001 of an inch.

FIND OUT TODAY how Hydro-Finish can pay off for you. Write for Bulletin 1400-A to PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Maryland.

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control.

Pangborn

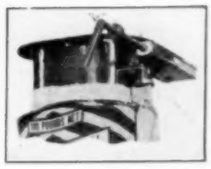
BLAST CLEANS CHEAPER

with the right equipment for every job

BREVITY—Identify by IEN - 9087 if you write the maker

PACKAGING . . Bag holding device mounts at bottom of a dry material bin

Source: B. F. GUMP CO.
1311-15 S. Cicero Ave., Chicago 50, Ill.



Twirl-Tite is a new push-pull device to rotate a pair of steel fingers and wrap a bag tightly around a delivery spout. Two designs include the hand-operated unit, shown in place on a spout in the illustration, and one operated by a torque motor. The former measures 4½ by 20 by 6 inches. The other measures 10 by 10 by 16 inches. Either is available in complete assembly with a spout specified to fit a given bin or hopper or as a separate unit without the spout which the user may desire to supply himself.

The wrapping action that draws the bag tightly around the spout secures it above a bottom flange integral with the spout. This flange takes the weight and distributes it evenly as filling proceeds. The bag is dust tight at the top in secured position. It releases freely to be taken by a suitable conveyor when filling is complete.

BREVITY—Identify by IEN - 9088 if you write the maker

SIGNALING . . Metal signs for warning, cautioning, directing

Source: EASTERN METAL OF ELMIRA INC.
128-32 Harrison St., Elmira Heights 3, N. Y.

Designs shown in pocket folder

The company announces addition of a new line of safety signs particularly for use in public utilities and industrial plants. The signs provide special warning messages and directions to protect workers and to assist in minimizing confusion. Each is designed so the lettering can be read quickly. Bright colors in contrasting combinations make the messages stand out. Each sign is made of steel with baked-enamel finish to resist weather, abrasion and impact.

BREVITY—Identify by IEN - 9089 if you write the maker

PROTECTING . . Fabric helmet fits snugly over the worker's head

Source: JOSEPH BUEGELEISEN CO.
1300-04 E. Woodbridge Ave., Detroit 7, Mich.

Buco Helmet is a new mercerized and sanforized fabric helmet, lightweight, snug fitting and washable for workers in plants where the atmosphere contains dirt and grit and where temperatures may vary over a wide range. The helmet keeps the head warm and the hair clean. It can be worn under safety helmets. It folds to carry in a pocket. List price is $18 per dozen.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9090 if you write the maker

Sure it threads faster and easier... it's a TOLEDO

He's happy about the whole set-up! His boss always makes sure that genuine TOLEDO Pipe Tools are on the job! These are the tools preferred by better mechanics everywhere for nearly half a century . . . *easy handling, faster cutting.*

Insist on TOLEDO for the finest in pipe threading and cutting tools and power machines! Designed to speed the work and assure fast make-up and trouble-free joints. Write for catalog. The Toledo Pipe Threading Machine Co., Toledo, Ohio.

TOLEDO

FOR PRECISION PIPE TOOLS

Complete Toledo line includes Hand Tools, all pipe sizes, ½" to 12" and ¼" to 1" bolts. Power pipe machines, up to 2" and 4" capacity.

BREVITY—Identify by IEN - 9091 if you write the maker

M&M giant keyseaters

M & M Giant Keyseaters, built in a range of sizes, speedily and accurately cut internal keyways or splines in the bores of pulleys, gears, fly wheels or any other machine part. Special fixtures and cutters are available for unusual shaped keyways and taper work. Send us your problems.

mitts & merrill

1014 South Water • SAGINAW, MICHIGAN

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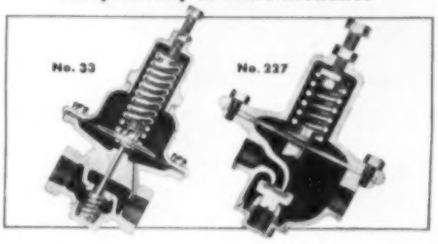
MASONEILAN REGULATORS

Solve Pressure Reducing Problems with Dependable Operation and Exceptionally Low Maintenance



You can count on Masoneilan Reducing Valves . . . for steam, water and air service . . . to reduce waste, cut costs and save money. That is why production and maintenance men in hundreds of plants use and recommend them. Their experience proves Masoneilan Reducing Valves provide accurate control and require minimum maintenance.

No. 33 for steam and air service — sizes from ½" to ¾". Reduced pressure ranges 2-20; 20-40; 40-100 psi. Maximum working pressure 200 lbs.

No. 227 for water service — sizes ¾" to 2". Reduced pressure ranges between 10 and 60 psi. Maximum working pressure 150 psi. Also available for air service from ¼" to 1".

MASON-NEILAN REGULATOR COMPANY

1188 ADAMS STREET
BOSTON 24, MASS., U. S. A.

BREVITY—Identify by IEN - 9093 if you write the maker

The New Super-Hard Carbide Drill

Up to 200% Greater Life

A Better Drill For Hardened Steel

Long carbide end keeps cutting heat away from braze.

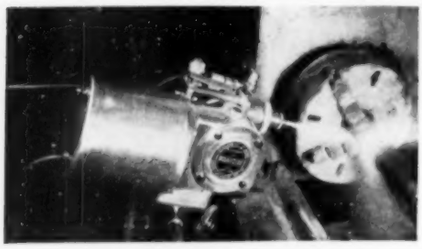
Write for Catalog Supplement No. 4

QUALITY CARBIDE TOOLS

Super TOOL COMPANY

17650 Hoover Rd., Detroit 13 • 2210 San Fernando Rd., Glendale 3

BREVITY—Identify by IEN - 9094 if you write the maker



Rebuild Worn Parts by *Metallizing*

Save time, money and critical parts by Metallizing with new Moguiectric Gun. Adds metal to metal with fine atomization for perfect bond. Simplified, easy to use, engineered to give trouble-free service.

Also ideal for spraying corrosion-resistant metal coatings and for production work.

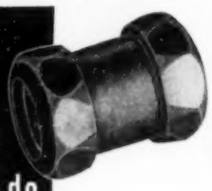
If you already have metallizing equipment, why not consider a trade-in now for the new Moguiectric Gun.

Write for new booklet containing complete information on equipment as well as production and maintenance applications.

METALLIZING COMPANY OF AMERICA
3520 W. Carroll Avenue • Chicago 24, Ill.

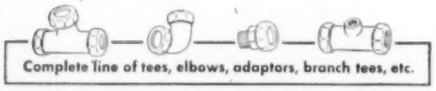
BREVITY—Identify by IEN - 9095 if you write the maker

½-minute pipe joint does 3 things a union can't do



- ELIMINATES THREADING
- PERMITS DEFLECTION
- SIMPLIFIES ASSEMBLY

Dresser Style '65 Fittings make permanently flexible-tight joints on plain-end pipe—quickly and without exact pipe fitting. They permit deflection up to 6° . . . stay tight despite vibration. Just stab on and tighten. For pipe from ⅜" to 2" diameter. Write for STYLE 65 CATALOG.



Complete line of tees, elbows, adaptors, branch tees, etc.

DRESSER "NO-THREAD" FITTINGS

Dresser Manufacturing Division, 59 Fisher Ave., Bradford, Pa. (One of the Dresser Industries). Sales Offices: New York, Philadelphia, Chicago, Houston, South San Francisco.

BREVITY—Identify by IEN - 9096 if you write the maker

TRIPLE-ACTION

ROCKWOOD SG-48 WaterFOG NOZZLE

Fights fires in ordinary combustibles and flammable liquids with ordinary water faster and more economically.

Protects firemen from hot fumes and gases and is easier to handle in action. Operates satisfactorily with a water pressure of 50 p.s.i. at the nozzle. It can be quickly changed to a *high velocity* WaterFOG, *straight* water stream or *low velocity* WaterFOG pattern by a slight turn of the handle.

For industrial plants, refineries, municipal fire departments, etc.

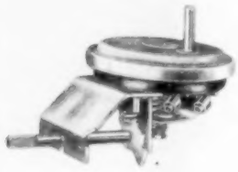
Approved by Underwriters' Laboratories, Inc. and Factory Mutual Laboratories.

ROCKWOOD SPRINKLER CO.
40 HARLOW STREET WORCESTER 5, MASS.

BREVITY—Identify by IEN - 9097 if you write the maker

SWITCH . . Pressure actuated, range from 7 to 11 in. of water column

Source: ACRO MFG. CO.
2038-42 E. Main St., Columbus 16, Ohio



New assembly of the company's rolling-spring snap-acting switch, previously described IEN-10581-50, includes an operating diaphragm, the switch and an opposing spring with cam adjustment which is set by turning a small shaft extending to the left. This shaft permits setting the switch for operation at 7, 8 or 9 in. of water column, minimum, or for 9, 10 or 11 in. maximum.

Operating air is admitted through a $\frac{3}{16}$-in. tube above the diaphragm. The pressure operates the switch in one direction. Pressure release permits the spring to return the contacts to initial position. The assembly measures 3 in. in housing diameter, 4¾ in. in length, 3¼ in. in height. The single-pole double-throw contacts rate 10 amp., 110-volt ac.

BREVITY—Identify by IEN - 9098 if you write the maker

DRYING . . Dielectric equipment to set the glue in wood assemblies

Source: WOOD WELDER MFG. CO.
2756-60 Whittier Blvd., Los Angeles 23, Calif.

New assembly of high-frequency electronic generator and portable electrode head operates on 110-volt, 60-cycle ac., drawing about 3,000 watts. The field set up between the electrodes, as the head is drawn over the surface of a wood assembly, will heat glue between the assembled parts to cure it in a matter of seconds. Applications also can be made on non-metallic materials such as Masonite, Celotex, Formica and Micarta.

The generator weighs about 140 lb. and measures 20 by 17 by 24 inches. The head weighs 3 pounds. Energy supplied to the electrodes can be adjusted at a selector switch on the generator housing. Penetration is ¼ to 2 inches. List price is $545.

BREVITY—Identify by IEN - 9099 if you write the maker

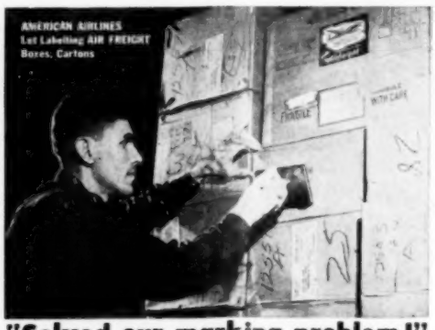
MANAGEMENT . . Booklet on price control as applied to the manufacture of capital goods

Machinery & Allied Products Institute
120 S. LaSalle St., Room 846, Chicago 3, Ill.

Problems involved are described in detail by new 36-page booklet, "Control of Capital Goods Prices", which advocates decontrol as the solution. Some of the topics are capital goods under recent price controls, complexity of capital-goods production, necessity to adjust ceiling prices, reasons for decontrol.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9100 if you write the maker



"Solved our marking problem!" say users everywhere

"The *MULTISTAMP* Hand Stamp Stencil Duplicator is the best thing we've seen for shipping tag and label addressing" . . "for marking boxes, cartons, packages." Quick, clean, accurate, easy-to-use. Prints *1000* or more clear, sharp copies from *one stencil . . one inking*. Just type, write, trace or draw on low-cost stencil, snap in position and print . . like using a rubber-stamp. Non-mechanical, of non-corrosive metal. No moving parts, has replaceable ink pads. 8 complete outfits, $9.50 to $99.50.

IT PRINTS ON
POSTCARDS SHIPPING TAGS
BOXES CARTONS
LABELS PACKAGES

At Your Office or Shipping Room Supply Dealer

MULTISTAMP STENCIL DUPLICATOR

MANUFACTURED ONLY BY THE MULTISTAMP CO., INC. NORFOLK, VIRGINIA

BREVITY—Identify by IEN - 9101 if you write the maker

DARNELL CASTERS

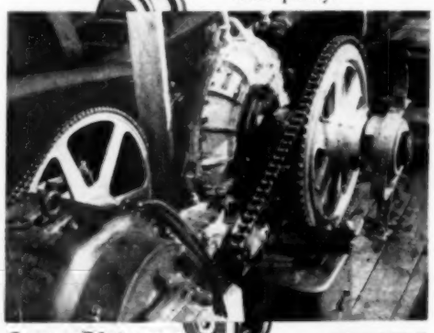
SAVE
EQUIPMENT . . . .
FLOORS . . . .

DARNELL CORP. LTD. Long Beach 4, Calif.
60 Walker St., New York 13, N. Y.
36 N. Clinton, Chicago 6, Ill.

BREVITY—Identify by IEN - 9102 if you write the maker

NO WASTED POWER WITH DIAMOND ROLLER CHAINS

- No slip—machinery operates at maximum output rate continuously.
- 98-99% efficiency at point of use.
- Long life performance reduces down time, maintenance and replacement expense.
- Exclusive Diamond uniform quality.



Center Distances Can Be Long Or Very Short

Shaft to shaft operation can be accomplished without slip regardless of center distances. The wide range of types and sizes of Stock Sprockets meet most all Roller Chain Drive requirements.

A copy of Catalog 709 is yours for the asking.

DIAMOND CHAIN CO., Inc.
Dept. 465, 402 Kentucky Avenue,
Indianapolis 7, Indiana

Offices and Distributors in All Principal Cities

Refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER

DIAMOND ROLLER CHAINS

BREVITY—Identify by IEN - 9104 if you write the maker

REALOCK FENCE

gives **locked-in** protection

All fittings on Realock Fence have bolts so placed that nuts cannot be removed from the outside. This means that Realock Fence provides *added protection* for your grounds and property . . . effectively discourages tampering by would-be trespassers.

Strongly constructed, Realock Fence has high resistance to the elements because of a special galvanizing process . . . gives permanent protection and trouble-free service year after year. For additional information write our nearest sales office or consult your classified telephone directory.

THE COLORADO FUEL & IRON CORPORATION – Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION – Oakland, California
WICKWIRE SPENCER STEEL DIVISION – Buffalo, New York

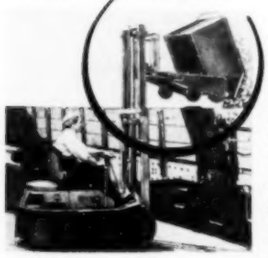
REALOCK FENCE
THE COLORADO FUEL & IRON CORPORATION
CF&I
BRANCHES IN ALL KEY CITIES

BREVITY—Identify by IEN - 9105 if you write the maker

PHILLIPS

PHIL-DUMP JUNIOR HAND DUMP TRUCK

NOW USED WITH FORK LIFT TRUCKS



Now adapted for use with fork lift trucks, the Phil-Dump Junior is a practical truck for hauling and unloading scrap, castings, stampings, cuttings, sand, fertilizer, powdered chemicals, etc. It has a ½ cubic yard capacity, with overall dimensions of 66" x 24½" x 38¼" high. Rubber tires make it easy to operate and protect floor. Write today for complete data.

GET THE PHILLIPS FACTS!

MANUFACTURERS SINCE 1863 — PHILLIPS (MINE AND MILL SUPPLY COMPANY) — PITTSBURGH, PENNA.

MINE & INDUSTRIAL CARS—FABRICATED STEEL IRON CASTINGS

BREVITY—Identify by IEN - 9106 if you write the maker

PHILLIPS INDUSTRIAL TRAILERS

Phillips Industrial Trailers, backed by 83 years of engineering experience, are built to withstand severest punishment in hauling all types of heavy equipment, industrial products, scrap, etc. Made in sizes and capacities to meet your need, with all steel electrically welded construction. Four wheel steer optional for pulling in trains. Write today for complete data.

FROM 2-1/2 TO 30 TON CAPACITY

- ALL STEEL
- STURDY BUILT
- ROLLER BEARINGS
- SOLID RUBBER TIRES

GET THE PHILLIPS FACTS!

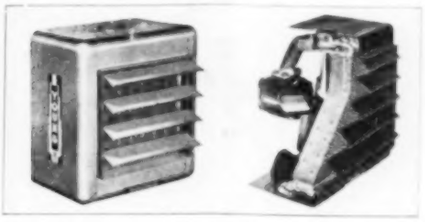
MANUFACTURERS SINCE 1863 — PHILLIPS (MINE AND MILL SUPPLY COMPANY) — PITTSBURGH, PENNA.

MINE & INDUSTRIAL CARS—FABRICATED STEEL IRON CASTINGS

BREVITY—Identify by IEN - 9107 if you write the maker

COOLING . . Exchange unit absorbs heat from circulated engine oil

Source: YOUNG RADIATOR CO.
719 Marquette St., Dept. 641, Racine, Wis.



Vertical seamless tubes are expanded into cast-iron headers at the top and bottom of this new unit oil cooler and are fitted with non-ferrous heat-radiating fins. Hot oil from an engine is connected into the top header so the oil flows downward to the bottom header and back again to the engine after having given up its head through the tubes. A motor-driven fan at the back of the assembly blows air between the fins to remove heat from the unit and deliver it into a space where the heat can be employed to advantage. Tube and header assembly is mounted on springs and enclosed in a steel housing equipped with adjustable louvers at the front. Threaded connections are provided to suspend the unit.

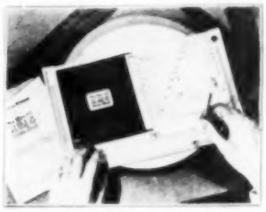
Six sizes in the line measure about 15 to 33 in. in width by 15 to 23 in. from front to back by 17 to 35 in. in height. Oil connection ranges from 1¼ to 2½ inches.

A feature of the construction is in the agitator element fitted into each of the vertical tubes to break up the flow of oil so it is constantly wiping the inner tube surface. Type OSH is the designation.

BREVITY—Identify by IEN - 9108 if you write the maker

CALCULATING . . Computing instrument quickly solves mathematical problems

Source: GRAPHIC CALCULATOR CO.
631-35 Plymouth Court, Dept. IEN, Chicago 5, Ill.



RMS Slide-Disk is a new instrument that operates by graphical construction of right-angle triangles, basing on the fact that the hypotenuse is the square root of the sum of the squares of the sides. The right-angle triangles are formed on a horizontal E-scale and a vertical F-scale. A disk, free to rotate about its center and also to slide along the F-scale, is mounted under the two scales.

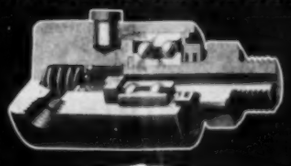
A value is entered by pressing a pointed stylus into the disk at the value on the E-scale and then by turning and sliding the disk to bring the impressed stylus to an index at the intersection of the two scales. The instrument measures about 12 by 8 by 1 inch. It is supplied with a 14-page instruction book and a steel stylus with an aluminum handle. Critical parts are made of Vinylite plastic. It can be cleaned with a damp cloth.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9109 if you write the maker

FAWICK ROTORSEAL

PROVIDES TROUBLE-FREE TRANSMISSION OF AIR AND LIQUIDS



If your machine problem requires the transmission of air or liquids from stationary to rotating machine members, a FAWICK ROTORSEAL will provide the trouble-free, practical answer.

Precision-made ROTORSEALS are available in either single or multiple passage units, producing an absolute sealing of air, liquids, or gases under pressure. They are equally effective in vacuum applications. Thousands of installations have proved the high efficiency of FAWICK ROTORSEALS.

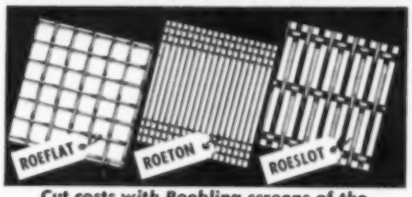
FAWICK AIRFLEX CO., INC.
9919 CLINTON ROAD • CLEVELAND 11, OHIO

For complete information on a FAWICK ROTORSEAL to suit your specific application, write to the Home Office, Cleveland, Ohio.

FAWICK Airflex
INDUSTRIAL CLUTCHES AND BRAKES

BREVITY—Identify by IEN - 9110 if you write the maker

AGGREGATE SCREENS



Cut costs with Roebling screens of the right wire . . . right construction

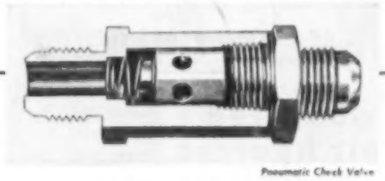
FOR INCREASED service life, Roebling manufactures aggregate screens in Roeflat construction for maximum wearing surface where abrasion is high . . . in Roeton construction to afford increased screening capacity . . . in Roeslot construction for highest screening capacity. Each of these screens is made of either Abraso (high carbon steel), Roetemp (oil tempered steel), or of stainless steel, monel or other alloys.

Send today for Aggregate Screen Catalog W-903 and information that will help you choose the right wire and construction for top service.

WOVEN WIRE FABRICS DIVISION
John A. Roebling's Sons Company, Roebling, New Jersey

ROEBLING

BREVITY—Identify by IEN - 9111 if you write the maker



Pneumatic Check Valve

KOHLER PRECISION PARTS

Aircraft • Industrial • Automotive

Kohler Precision Parts are used by all leading manufacturers of jet engines as well as by manufacturers of commercial, military, and private aircraft, Diesel engines, automobiles, trucks, tractors, and for industrial test equipment.

Shown is a Kohler-designed pneumatic check valve used on many of the newer actuating systems. Its no-leak feature will solve stringent installation requirements.

Kohler is a leading supplier of pneumatic valves, with an organization skilled in precision workmanship, and will develop valves for volume production to meet special applications. Send your specifications or request a catalog today.

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

Plumbing Fixtures • Heating Equipment
Electric Plants • Air-Cooled Engines • Precision Parts

BREVITY—Identify by IEN - 9112 if you write the maker

RUBEROID RAPID ASPHALT PAINT

A LASTING PROTECTION FOR YOUR EQUIPMENT

Whenever wear, weather or chemical attack are dangers to electric or industrial equipment, use Ruberoid Rapid Asphalt Paint for economical, lasting protection. Highly resistant to most acid and alkali conditions, this asphalt paint is composed of quality grade bitumens.

Almost any surface can have Rapid Asphalt Paint protection. Metal, wood, masonry or fabroid — this tough waterproof paint adheres readily and permanently. Easily applied by brush or spray, it quickly dries to a lacquer-like hardness. Ruberoid Rapid Asphalt Paint is truly a "*must*" for your equipment!

- High resistance to acid and alkali—protects against wear and exposure.
- Heat resistant—stands temperatures up to 212° F.
- Highly penetrant — preserves wood.
- Excellent electrical insulation qualities.
- Prevents corrosion, rust rot, and deterioration.
- Tasteless and odorless when dry.

The RUBEROID Co. — MORE YEARS FOR YOUR DOLLAR WITH RUBEROID BUILDING MATERIALS

EXECUTIVE OFFICES: 500 Fifth Avenue, New York 18, N. Y.

BREVITY—Identify by IEN - 9113 if you write the maker

IMPORTANT DATA ON

UNIVERSAL Flexible METAL HOSE

for conveyance of gases, liquids, semi-solids, dust, etc.—for moisture-proof armored conduit and control casings—and many other applications.

Write for CATALOG U-101 — Just Published

UNIVERSAL METAL HOSE CO.
2131 South Kedzie Avenue Chicago 23, Illinois

BREVITY—Identify by IEN - 9114 if you write the maker

Mueller Climatrol

space-saving **gas-fired unit heaters**
(propeller fan or blower types)

Proof of SUPERIORITY is here

1. One-piece all-welded steel heat exchanger — no tie-rod, bolted, gasketed, or slip joins to leak, separate or crack.
2. Uniform air flow and heat distribution — burner extends under entire heat exchanger; insures maximum fuel economy.
3. High Crown Sheet — no flame impingement, no hot spots.

MUELLER gives you a unit to fit every application — 4 sizes: 60,000, 90,000, 120,000 and 150,000 Btu input capacities. A.G.A. and Underwriters' Laboratories approved — with design features that assure longer life, greater economy. These units are *shipped assembled and pre-wired* for quick, low-cost installation. E-44

Write for full details —

L. J. Mueller Furnace Co.
2040-K W. Oklahoma
MILWAUKEE 15, WISCONSIN

BREVITY—Identify by IEN - 9115 if you write the maker

"CAP THIS"

...for lowered maintenance!

S.S.White ELASTOPLASTIC ALEMITE FITTING CAPS...

Keep the tips of alemite fittings clean. Prevent dirt or grit from being forced into bearings when grease gun is applied. Cut maintenance costs because—*the bearing that lives a clean life, lives a long life!*

Available for Zerk or Hydraulic, Button Head and 1/8" Dot Types. Black vinylite plastic, long-lasting, easy to apply, are not affected by oil, grease or gasoline.

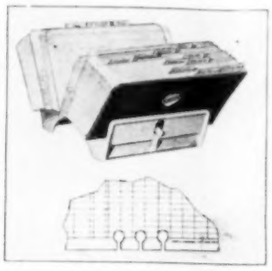
ASK FOR FREE BULLETIN P-5103

THE S.S.White PLASTICS DIVISION
DENTAL MFG. CO.
Dept. NP 10 East 40th St.
NEW YORK 16, N. Y.
Western District Office: Times Building, Long Beach, Calif.

BREVITY—Identify by IEN - 9116 if you write the maker

RECORD KEEPING . . Card file shifts to right and left for control

Source: DIEBOLD INC.
900 Mulberry Road S. E., Canton 2, Ohio



Three key slots punched in the bottom edge of the cards in this new desk-tray file position the cards centrally, to the left and to the right. This provides three card positions to signal given conditions such as items on order by off-set to the left, items to be ordered by off-set to the right, or items in satisfactory inventory amount in the central location. The cards mount in a desk tray with capacity to hold 810. A companion card is supplied to signal "back orders" with one key slot that positions it off-set to the left. The tray is arched so the cards can be opened for access.

Card sizes range from 3 by 5 in. to 6 by 9 inches. They can be supplied in various layout arrangements for given purposes. A complete set-up, listing at about $37, includes the tray, 1,000 inventory cards and 50 back-order guide cards.

BREVITY—Identify by IEN - 9117 if you write the maker

WRENCH . . Torque indicating, power driven, 100 to 2,000 inch pounds

Source: TRU-CIRCLE PRODUCTS CO.
P. O. Box 336-W, South Bend 24, Ind.

Six ratings, each starting at zero, for maximum at 100 to 2,000 in. lb. are available in this new Garvin torque-indicating wrench to drive threaded fastenings to a predetermined tightness. Each employs an electric or pneumatic motor suspended between two ball bearings in the housing and connected by double gearing to a standard deflection-type torque wrench with its indicating pointer and scale on the face of the housing.

As torque is applied the motor swivels and provides a visual reading on the scale. At the same time it makes contact with micro switches which actuate relays and close indicating light circuits. These show green for minimum torque and change to red when maximum torque is imposed.

List price ranges from about $650 to $1,500. The smallest is portable. The others are mounted on radial arms.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
See our suggestions at the index, page 114

BREVITY—Identify by IEN - 9118 if you write the maker

NOW! A BETTER WAY TO APPLY COATINGS, SEALERS, ADHESIVES

Works ANYWHERE . . . From

CAR BOTTOMS TO ROOF TOPS

● Here's the faster, low-cost way to apply sound-deadening materials on automobiles . . . to put gummy roofing materials on roof tops . . . or to handle scores of other materials ranging from heavy mastics to light fluids.

Graco Powerflo Pumps have hundreds of industrial uses. Powerflo makes easy work of applying coatings, sealers and adhesives . . . does spraying and calking jobs faster, more economically.

NO TRANSFERRING—Pumps direct from original container. No pressure pots, no transferring. Double-acting piston assures high-volume delivery. Pump units for full-size drums or 5 gal. pails. Includes spray, pole, or extrusion gun.

Write and tell us your application problem . . . if Powerflo can help you, we'll send detailed information at no obligation to you. Free catalog also available.

GRAY COMPANY, INC.
92 Graco Square, Minneapolis, Minnesota

GRACO Powerflo Pumps
District offices in Detroit, New York, Philadelphia, Chicago, San Francisco

BREVITY—Identify by IEN - 9119 if you write the maker

PREMOLDED CALKING

for corrugated sheet metal roofing, siding

Calk as you erect! Fabco Corrugated Calking Strips are the labor-saving shortcut to weathertight corrugated construction. Premolded to fit all standard sheet corrugations, of compositions of rubber or asphalt, the calking strips are quickly and easily installed as sheets are laid. They form a durable seal at all openings where sheet corrugations meet flat surfaces such as flashings at ridge, gutter, corner and curbing and around doors and windows. They also seal around the shank of the fastener.

Placed between aluminum sheets and structural steel members, they insulate against galvanic corrosion. The strips can be cut, punched or drilled with ordinary tools. Supplied also for calking along a single corrugation or at required diagonals for roof hip or gable sealing.

For full information and diagrams of typical corrugated construction assemblies, write for Bulletin 501 — TODAY!

FABRICATED PRODUCTS COMPANY
WEST NEWTON, PA.

BREVITY—Identify by IEN - 9120 if you write the maker

MARK-TIME "5400" BELL TIME SWITCH

is first choice for *ruggedness* and *versatility*

first where quality counts

This Mark-Time Two-Purpose unit rings the bell with manufacturers of all types of electrical equipment and appliances.

The "5400" Time Switch turns an electrical device OFF after a pre-set time interval and simultaneously provides a clear warning bell. ON type unit available on special order.

Gives reliable, continuous service under the heaviest duty.

Wide variety of modern dials and knobs.

Write for further information and prices.

MARK-TIME 5400-SERIES BELL TIME SWITCH
U.L. approved for 30 amperes, 125 volt or 10 amperes, 250 volt, 1 HP operation, AC only. Timings available from 60 seconds to 5 hours.
Normally supplied for Center Stud mounting. Other mountings available upon request.

MARK-TIME
M. H. RHODES, INC.
HARTFORD, CONNECTICUT

In Canada send inquiries to: Ontario Hughes Owens Co. Ottawa, Ontario

BREVITY—Identify by IEN - 9121 if you write the maker

LOWEST COST IN LEAST SPACE PER UNIT OF ACTUAL COOLING CAPACITY!

PRITCHARD
Series "PB"
COTOPACK*
COOLING TOWERS

Never before such high quality offered in a low cost tower. Suited for jacket water, air compressors and other services requiring dependable water cooling equipment. Centrifugal blower is corrosion-proof and balanced for quiet, high capacity, low horsepower, long life operation. Shipped completely assembled. Investigate this low cost tower today!

Write for Bulletin No. 5.6.082A

* Reg. Trade Name

Cooling Towers
Specialized Heat Exchangers
Gas & Air Treating

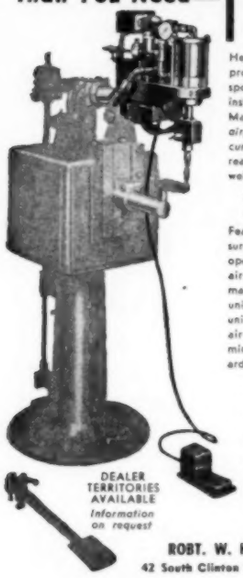
J. F. Pritchard & Co.
EQUIPMENT DIVISION
Dept. No. 156 908 Grand Ave. Kansas City 6, Mo.

District Offices: CHICAGO • HOUSTON • NEW YORK • PITTSBURGH
TULSA • ST. LOUIS • Representatives in Principal Cities from Coast to Coast

BREVITY—Identify by IEN - 9122 if you write the maker

MORE SPEED than You Need—

Just Add WELD-AIR-MATIC to your Old Rocker Arm Welders



Here's a way to really produce *extra* profits with your present rocker arm spot welders. All it takes is the simple installation of a compact Weld-Air-Matic. This self-contained control unit *airpowers* your welder—adds speed, accuracy and ease *of operation* not realized in your present foot-operated welder.

Tests Prove 10,000 Welds Hourly On Continuous Daily Schedules

Feather-touch foot switch controls pressure by energizing a coil on a 4-way operating valve. Employing reduced air pressure of 15 to 50 lbs., it has a maximum stroke of 1½" on size 1 unit, 2" on size 2, and 2½" on size 3 unit. Requires a maximum of 4 cu. ft. air supply per minute with 80 lbs. minimum line pressure, and any standard Weld Timer. Three sizes available—all accessories mounted to one strong aluminum alloy casting.

Get the facts on how you can break all previous production records by modernizing with the new Weld-Air-Matic. The savings you'll make will quickly compensate for the nominal investment.

DEALER TERRITORIES AVAILABLE
Information on request

ROBT. W. HOFFMAN COMPANY, INC.
42 South Clinton Street Chicago 6, Illinois

BREVITY—Identify by IEN - 9123 if you write the maker

Amazing

ALEMITE OIL-MIST

AUTOMATIC LUBRICATION SYSTEM

Revolutionizes Machinery Lubrication

Unbelievably simple system atomizes oil into mist, distributes it through tubing to bearings. Bathes all bearing surfaces with fresh, clean, cool oil film. Uniformly maintains oil film on all sliding, rubbing, rolling parts regardless of variations in load, temperature or speed! No "peaks and valleys" of lubrication.

Fully automatic—eliminates waste and the uncertainties of the "human element." Extends bearing life as much as 17½ times. Seals bearings against dirt and abrasives. Cuts oil consumption as much as 90%. Greatly reduces the number of oils needed.

Desk-Top Demonstration, No obligation

A note on your Company letterhead will bring a trained Alemite Lubrication Representative to your offices. In a brief yet thorough Desk-Top Demonstration, he will tell you how Alemite Oil-Mist can provide more positive lubrication at lower cost than you ever thought possible. Write Alemite Division of Stewart-Warner, Dept. K-91, 1850 Diversey Parkway, Chicago 14, Illinois

STEWART WARNER

Alemite OIL-MIST
Automatic Lubrication System

BREVITY—Identify by IEN - 9125 if you write the maker

SOLENOID . . Key type design, push or pull operation, ⅝ in. stroke

Source: PRACTICAL ELECTRIC CO.
4503-7 Oakwood Blvd., Dept. BY, Melvindale, Mich.

Rating is 4 lb. at ⅝-in. maximum stroke or 11.1 lb. at ⅛ in. from closed position in movement against gravity and at 85 per cent of rated voltage for this new ac. solenoid. Rating increases by 1½ lb., twice the weight of the armature, for operation with gravity. The unit can be specified for 110, 220 or 440-volt 60-cycle ac. List price is $17.50 for the push design in complete assembly without a cover. It is $7.50 for the coil only. A set of covers adds $1.00.

Overall height in retracted position is about four inches. Width is 2⅛ in. measured over the coil and about 2⅞ in. measured over the frame. The coil can be replaced without removing the solenoid from its original mounting.

BREVITY—Identify by IEN - 9126 if you write the maker

METAL TREATING . . Powder material forms phosphate paint base on steel

Source: KELITE PRODUCTS INC.
P. O. Box 2917-A Terminal Annex, Los Angeles 54, Cal.

Can be used in black iron tanks

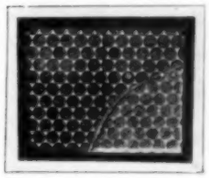
Patent has been applied for on the company's material Keykote, a new phosphatizing compound to produce a corrosion resistant base for subsequent paint finishing. Application is by spray or by dipping for an interval of one or two minutes at 100 to 170 deg. F.

The operation starts with clean steel surfaces. Concentration is about 1 oz. per gal. to produce a pH of 3.45. It is not necessary to rinse but one can be employed cold. Then the parts should be hot-air dried immediately.

BREVITY—Identify by IEN - 9127 if you write the maker

DUST COLLECTING . . Filter panel for air conditioning and ventilating

Source: GLASFLOSS CORP.
155 E. 44th St., Room 711, New York 17, N. Y.



New bonded mat has been added on the downstream face of the company's fiber-glass filter panel to supplement impinging action of the standard panel. It adds a strainer effect for dust removal from an air stream passing through.

Five sizes in the line range from 15 by 20 in. to 20 by 25 in. in nominal dimensions. All are nominally 2 in. in thickness. Rated capacity, when clean, is 600 to 1,000 cfm. The outer frame of the filter is made of chipboard.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

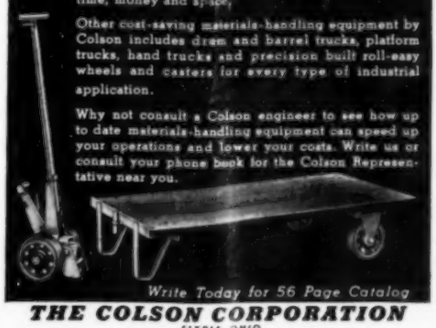
BREVITY—Identify by IEN - 9128 if you write the maker

In Materials-Handling the Colson® LIFT-JACK System Lets 1 man do the work of 2

Through production, in and out of storage, on and off freight cars or trucks, Colson Lift-Jacks with wood or steel semi-live skids can easily double the efficiency of conventional hand trucks. You save time, money and space.

Other cost-saving materials-handling equipment by Colson includes drum and barrel trucks, platform trucks, hand trucks and precision built roll-easy wheels and casters for every type of industrial application.

Why not consult a Colson engineer to see how up to date materials-handling equipment can speed up your operations and lower your costs. Write us or consult your phone book for the Colson Representative near you.



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THE COLSON CORPORATION
ELYRIA, OHIO

CASTERS . . . . LIFT-JACK SYSTEMS . . . . INDUSTRIAL TRUCKS

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HERMAN NELSON ECONOMY MODEL PORTABLE HEATER

Electric motor powered.
Uses kerosene for heating fuel.
125-190,000 BTU capacity.
Costs but 19¢ per hour to operate.

HEAT ON WHEELS
...for Construction or Standby!

SUPERIOR features of Herman Nelson Portable Heaters give you quick, safe, economical heat . . . *where you need it*. Easily moved and operated by one man. Exclusive *"sealed flame"* eliminates dangers of toxic fumes . . . fire hazards. Make your own "working weather" with Herman Nelson units. Heat that's reliable . . . always ready for any job. Available in many types . . . and capacities up to 450,000 BTU.

Plan your heating requirements now! For full information write Dept. IN-9.

AAF

HERMAN NELSON
Division of AMERICAN AIR FILTER COMPANY, INC.
MOLINE, ILLINOIS

BREVITY—Identify by IEN - 9130 if you write the maker

Cherry Rivet Company

Lock Bolts

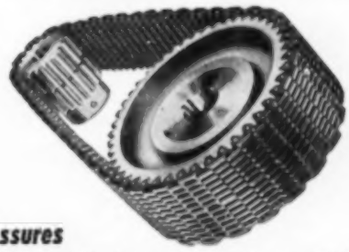
combine the advantages of bolts and rivets

Learn why Lock Bolts, the new high strength, structural fastener, *weigh 50% less* than same sized AN bolt yet offer *equal tensile strength* and *greater shear strength*. See how Lock Bolts slash installation time. Fact-packed data sheet sent free on request. Address Dept 1-112.

Cherry Rivet Company | *A Division of Townsend Company*
231 WINSTON STREET • LOS ANGELES 13, CALIFORNIA

BREVITY—Identify by IEN - 9131 if you write the maker

WHITNEY SILENT CHAIN



Assures
Efficient, Positive Power Transmission

Regardless of your drive problems, Whitney Silent Chain will meet your particular requirements. These tough, rugged chains deliver full power without friction loss or slippage. Their positive grip helps maintain product uniformity. They withstand shock loads without breakage . . . give long life and cut maintenance to the bone. And remember Whitney Cut Tooth Sprockets complete the combination assuring efficient power transmission. It will pay you to *standardize* on Whitney. Write for complete information.

WHITNEY CHAIN COMPANY
202 Hamilton Street Hartford 2, Connecticut

BREVITY—Identify by IEN - 9132 if you write the maker

around the world, it's

HOOVER BALLS

made of

CHROME STEEL • CARBON STEEL • STAINLESS STEEL BRASS • BRONZE AND MONEL METAL

"America's Foremost Ball Manufacturer"

HOOVER BALL and BEARING CO.
Ann Arbor, Michigan

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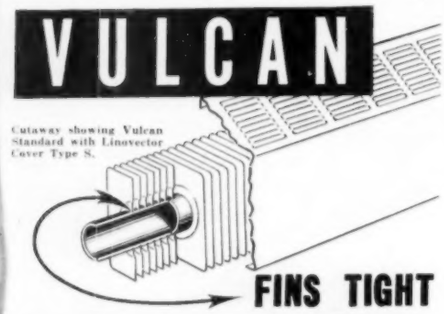
VULCAN



Cutaway showing Vulcan Standard with Linovector Cover Type S.

FINS TIGHT for BEST HEAT TRANSFER

Steel Fins imbedded in first quality Seamless Steel Pressure tube (A.S.T.M. Spec. A-83) by a special Vulcan process become an integral part of the tube insuring better heat transfer . . . are *guaranteed* to remain tight under conventional operating conditions. All steel units *guaranteed* for 450 P.S.I.!

Complete line of covers and accessories for commercial and residential (Baseboard) units.

Send for Illustrated Booklet.

FOR 25 YEARS A LEADER IN FIN-TUBE RADIATION

THE VULCAN RADIATOR CO.
26 FRANCIS AVENUE, HARTFORD 6, CONN.

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MINNEAPOLIS MOLINE MM MODERN MACHINERY

INDUSTRIAL WHEELERS

for material handling or equipment

27 hp. and 51 hp. max. developed engine hp. Models

Manufacturing and processing plants use Minneapolis-Moline heavy duty wheel tractors on unusual yard handling operations. A wide selection of attached tools is available for moving bulk or pellatized material with small investment.

Manufacturers also use MM wheelers to mount graders, stevedore cranes, revolving cranes, and sweepers. Specifications available on request or ask for recommendation for your product. Engineering service available.

MINNEAPOLIS-MOLINE
MINNEAPOLIS 1, MINNESOTA

BREVITY—Identify by IEN - 9135 if you write the maker

METER . . Power factor instrument applies in balanced three phase circuit

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Type AK-3 is a new unit in the company's line of hook-on electric instruments including previously developed volt-ammeter and wattmeter. The new unit is equipped with three voltage leads to clamp on the conductors. The instrument itself is then hooked in place and its dial is rotated to obtain a direct reading.

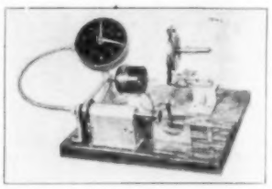
Application is in circuits from 1 to 600 volts carrying 15 to 600 amperes. Accuracy is within 0.05 per cent power factor. Frequency range is 50 to 90 cycles. Effective scale length is 13½ inches.

List price is about $85. A leather case adds $10. Illustrated details of the three hook-on instruments and other electrical instruments for electric testing is contained in 16-page bulletin GEA-5469, available on request.

BREVITY—Identify by IEN - 9136 if you write the maker

WINDING . . Bench mounting machine to random wind miniature bobbin coils

Source: GEO. STEVENS MFG. CO.
6020-24 N. Rogers Ave., Chicago 30, Ill.



Model 39 is a new bench-mounting machine for random-wound bobbin coils to ¾ in. in width and to 1½ in. in diameter. It employs a 1/25-hp. variable-speed universal motor and a foot-operated speed control. The motor is belt connected to the ball-bearing spindle with a flat fabric belt to minimize transmission of vibration to the spindle. A suitable support bracket and tension are provided for the spool from which the wire is fed. Winding speed is to 5,000 rpm. The machine is supplied in set-up for a specified coil.

Adjustment cams range from 1/64 to ¾ in. in steps of 1/64 inch. Gears range from 20 to 100 teeth and are set up in combinations for required coils. Various designs of counter, in addition to the dial type unit can be specified.

BREVITY—Identify by IEN - 9137 if you write the maker

PLANT MAINTENANCE . . Problems and solutions in book that publishes proceedings of January conference

Clapp & Poliak Inc.
341 Madison Ave., New York 17, N. Y.

544 questions on plant maintenance are answered in new 228-page book, "Techniques of Plant Maintenance", list price $6. It contains the papers presented at the recent Plant Maintenance Show, grouped under topics such as electric equipment, power plant, small plants, lighting, chemical, paper, food processing, metal-working plant problems, lubrication. The questions and their answers follow the presentation sessions.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9138 if you write the maker

ZIP OFF

SCALE
RUST
PAINT

with

AURAND CLEANING TOOLS

AURAND rotary chipping action quickly, easily, thoroughly removes scale, paint, rust, and other accumulation from any hard surface. Renewable cutter heads and fool-proof cutting depth adjustment allow the unskilled operator to produce perfectly clean surfaces. Available in electric or pneumatic models. Write today for further information on cleaning your iron, steel, brick, concrete, and other hard surfaces.

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AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

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Save Time, Money in Production, Assembly, Packing and Shipping . . .

Use Seamless F.O.S. Industrial Tape

MASKING

HOLDING

PROTECTING

Manufacturers, packers and shippers the country over are speeding operations and cutting costs with Seamless F.O.S. Industrial Tape. Look over some of the time and money-saving uses (left) of pressure-sensitive tape. Check possible uses in your plant. For authoritative advice, samples, and prices, write Seamless—the originators of pressure-sensitive industrial tape.

Do you have a defense contract requiring tape to meet government specifications? We can help you. Wire details collect for 24-hour reply.

OTHER USES

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THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN., U.S.A.

BREVITY—Identify by IEN - 9140 if you write the maker

TEST IT FREE! Samples of VELLUM are yours for the asking. Send for this kit today.

Write on your company letterhead for sample kit, sent without obligation

Ageproof VELLUM

Permanently super-transparent AGEPROOF makes better prints now, or years from now

This is the famous Dietzgen vellum that combines a perfect drafting surface with perfect reproduction qualities. And AGEPROOF VELLUM cannot turn yellow, become brittle or lose transparency with age.

Plasticized through and through, AGEPROOF VELLUM contains no oil, no wax to bleed, become rancid or turn color. Because the plastic transparentizing agent permeates every fibre, you can erase repeatedly without troublesome ghosts occurring in prints, and redraw without feathered lines if you are using ink.

Available in three different weights, in frost-white or eye-easing blue. Test AGEPROOF VELLUM and you'll never use any other material for important tracings.

EUGENE DIETZGEN CO. • Chicago • New York • San Francisco New Orleans • Los Angeles • Pittsburgh • Washington • Philadelphia Milwaukee • *Dealers in All Principal Cities*

DIETZGEN
EVERYTHING FOR DRAFTING SURVEYING & PRINTMAKING

Free Samples!

BREVITY—Identify by IEN - 9142 if you write the maker

For HEAVY DUTY WORK!
Severest Electrical Services

P-506-CE—Plug with Cap

S-506-DB
Socket with deep Bracket

JONES PLUGS & SOCKETS
500 SERIES
Proven Quality!

For 5,000 Volts, 25 Amperes per Contact Alterable by circuit Characteristics.

Socket contacts of phosphor bronze, knife-switch type, cadmium plated. Plug contacts hard brass, cadmium plated. Made in 2, 4, 6, 8, 10, and 12 contacts. Plugs and sockets polarized. Long leakage path from terminal, and terminal to ground. Caps and brackets, steel parkerized (rust-proofed). Plug and socket blocks interchangeable in caps and brackets. Terminal connections most accessible. Cap insulated with canvas bakelite.

Write for Jones BULLETIN 500 for full details on line.

Send for complete data on this new basic improvement!

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HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED-CARR FASTENER CORP.

BREVITY—Identify by IEN - 9143 if you write the maker

BIGGEST TIME SAVER IN THE STOCKROOM
PRE-MEASURED • CARTONIZED
NEW BEDFORD ROPE

NEW BEDFORD ROPE

No longer is there any need for stockmen to measure off lengths of rope. *New Bedford does it for them at the factory—accurately marks off in red ten foot lengths of rope.*

No longer is there any need to cut bands and remove covers from rope. *New Bedford cartonizes rope—packs it in sturdy, octagonal cartons that can be stacked ceiling high without danger of toppling. All that's necessary is to punch in the perforated circle in the top of the carton and start paying out rope.*

Add these exclusive features to New Bedford quality—New Bedford durability—New Bedford dependability—and you'll see why New Bedford's *always* the buy *all ways*. Cartonized in half and full coils in manila and sisal. *New Bedford costs no more!*

Send for the FREE reference chart and specifications of New Bedford manila, sisal and nylon rope.

NEW BEDFORD CORDAGE CO.
New Bedford, Mass.

BREVITY—Identify by IEN - 9144 if you write the maker

The New Hoffman ELECTRONIC SAFETY GUARD gives you

New Electronically Controlled SAFETY and BARRIER GATE GUARD brings benefits to both management and workers

YOU can increase your plant power press production immediately with installation of the Hoffman Safety and Barrier Gate Guard. It gives the operator greater assurance, eliminates fatigue and accident time-loss. It will give higher and smoother production per man hour.

The Hoffman Guard is an electronically controlled guard consisting of four major parts—Light Source and Photo Cell Assembly — Amplifier — Magnetic Treadle Control — Non-Repeat Micro Switch. The Barrier Gate Guard is an auxiliary unit and is used as a double safety precaution.

HOFFMAN ENGINEERING CORP.
Department 4-1 • Anoka, Minnesota
Please send free details about the Hoffman Electronic Safety Guard.
Name
Address
City State

HOFFMAN ENGINEERING CORPORATION
ANOKA MINNESOTA
Electronic Controls for Industry

BREVITY—Identify by IEN - 9145 if you write the maker

MARKING . . Ceramic decalcomania fuses on glass at 1,100 deg. F.

Source: MEYERCORD CO.
5321-25 W. Lake St., Chicago 44, Ill.

Ceramic colors printed on paper are now available for fusing to glass to produce multi-color registration in a single firing at 1,030 to 1,100 deg. F. The decalcomania is available to order in specified designs, sizes and colors with delivery about four weeks after receipt of an order. The design can be applied on irregular surfaces. It can provide a close approach to hand-painting. Thermo-Cals is the trade name.

BREVITY—Identify by IEN - 9146 if you write the maker

METAL TREATING . . Chemical salt for chromate coating zinc and cadmium

Source: ENTHONE INC.
440-44 Elm St., New Haven 2, Conn.

Technical data upon request

Enthox trade names a new process employing a chemical mixture. It is dissolved in water in the ratio of 1 to 4 oz. per gal. to produce, by dipping, a gold-colored iridescent chromate coat on zinc plate, zinc-base alloys and cadmium plate. The coating can be used in its natural iridescent form. It can be dyed various colors. It also acts as an excellent base for paint finishes. Packaging is in 100-lb. drums with list price at 65 cents per pound.

BREVITY—Identify by IEN - 9147 if you write the maker

EXTINGUISHING . . Rubber gear pump with equipment to mount on a truck

Source: PORTO PUMP INC.
225-29 Iron St., Detroit 7, Mich.

Pallet Model Pumper is a new assembly of the company's rubber-impeller pump, previously described IEN-10383-46, a 200-gal. tank, a reel and 200 ft. of 1½ in. fire hose, a length of supply hose, an aluminum extension ladder, fire axe, hand extinguisher, straight-stream nozzle, combination fog and straight-stream nozzle.

The pump is driven by a 4-cycle gasoline engine. It can be carried from the rest of the equipment to a water source. The rubber-gear construction permits handling dirty or clean water. The complete assembly measures 48 by 78 by 28 inches. It weighs about 400 lb. empty. List price is $1,050.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9148 if you write the maker

BALL BUSHING

The BALL BEARING for your LINEAR MOTIONS

Sliding linear motions are nearly always troublesome. Thousands of progressive engineers have solved this problem by application of the Precision Series A BALL BUSHINGS.

And now hundreds of original equipment manufacturers use the low cost Commercial Series B BALL BUSHINGS which were developed for support of linear motions in competitively priced, volume manufactured products where super precision is not essential.

Alert designers can now make tremendous improvements in their products by using BALL BUSHINGS on guide rods, reciprocating shafts, push-pull actions, or for support of any mechanism that is moved or shifted in a straight line.

Improve your product. Up-date your design and engineering with BALL BUSHINGS!

LOW FRICTION • LONG LIFE
ELIMINATES BINDING and CHATTER
SOLVES SLIDING LUBRICATION PROBLEMS
LASTING ALIGNMENT • LOW MAINTENANCE

Now manufactured for ¼", ⅜", ½", ¾", 1" and 1½" shaft diameters.

Write for descriptive literature and the name of our representative in your city.

THOMSON INDUSTRIES, INC. Dept. I
MANHASSET, NEW YORK
PROGRESSIVE MANUFACTURERS USE BALL BUSHINGS—A MAJOR IMPROVEMENT AT A MINOR COST

BREVITY—Identify by IEN - 9149 if you write the maker

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You can improve your products and equipment, give them corrosion resistance and minimize use of critical materials by designing your products around PERMACLAD. Get complete information today.

For Better Products at Low Cost—Specify PERMACLAD

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STAINLESS CLAD STEEL

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125 Years of Iron and Steel Making Experience

Other Products:
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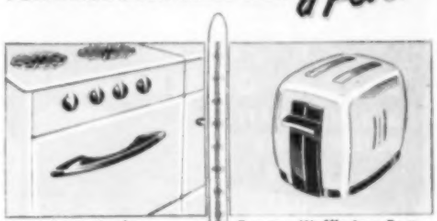
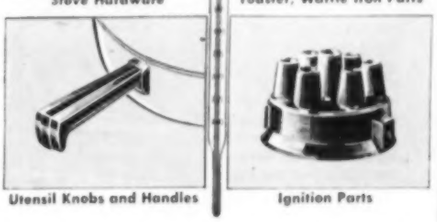
BREVITY—Identify by IEN - 9150 if you write the maker

FOR PRODUCTS THAT RUN *a Fever*


Stove Hardware
Toaster, Waffle Iron Parts


Utensil Knobs and Handles
Ignition Parts

Use BAKELITE Heat-Resistant Phenolics!
TRADE-MARK

Many products and parts that operate at high temperatures are designed with *heat-resistant* BAKELITE Phenolic Plastics in mind. An extensive group of such materials meets recurrent temperatures ranging from 375 to 525 deg. F. In addition, these mineral-filled molding plastics as a class are the most dimensionally stable of all the phenolics, primarily because of their very low moisture absorption.

One such material is BM-13335 for intermittent service in the 500 to 525 deg. F. range. Its specific gravity is from 1.55 to 1.61. It can be preformed on standard tabletting equipment. It is readily molded to an excellent finish.

Another is BM-250 which offers greater resistance to mechanical shock. Its specific gravity is from 1.86 to 1.94. It is also useful for overcoming such difficulties as cracking around molded-in metal inserts. This material, however, cannot be tabletted and does not provide the ease of moldability of BM-13335.

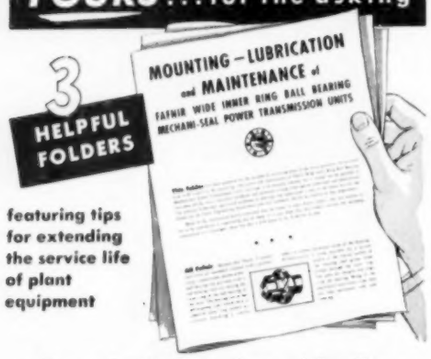
In between are other heat-resistant BAKELITE Phenolics developed to meet varying Government and industrial standards.

Bakelite's experienced engineering staff can help you apply these time-tested materials effectively, rapidly, and at lowest cost. Write Department CF-14.

BAKELITE
TRADE-MARK
Phenolic PLASTICS
TRADE MARK
BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.

BREVITY—Identify by IEN - 9152 if you write the maker

YOURS . . . for the asking



featuring tips for extending the service life of plant equipment

• FACTUAL INFORMATION and easy-to-follow illustrations make these folders valuable to plant engineers and maintenance men . . . and important additions to any power transmission service manual. Send for copies. The Fafnir Bearing Company, New Britain, Connecticut.

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BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

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Fully Automatic
STEAM GENERATORS
and HOT WATER BOILER UNITS
Save Fuel!

For light oil, heavy oil, gas and gas/oil firing. Steam generating units from 15 to 500 HP.—15 to 200 p.s.i. Hot water boiler units 30 p.s.i. Reduce operating costs as much as 40% — save man-hours — get clean, dependable heat and hot water. A.S.M.E. Code construction.

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ORR & SEMBOWER, INC.
860 Morgantown Rd., Reading, Pa.

BUILDERS OF DEPENDABLE BOILERS SINCE 1885

BREVITY—Identify by IEN - 9154 if you write the maker

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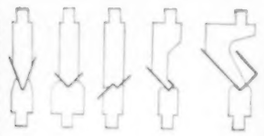

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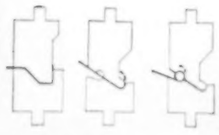


Made by the makers of the famous SEMCO NIBBLER PRESS

• MANY STILL IN USE EVEN AFTER 10, 20 AND EVEN 30 YEARS.
• THEY COST MORE BUT THEY LAST FOR YEARS.

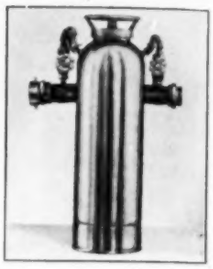
Write for estimates on your work and ask for latest literature.

SEMCO
SERVICE MACHINE COMPANY
INCORPORATED
200 MILLER STREET ELIZABETH, N. J.

BREVITY—Identify by IEN - 9155 if you write the maker

WATER TREATING . . Wetting compound adds to water for fire extinguishing

Source: AMERICAN MARINE PAINT CO.
309-13 California St., San Francisco 4, Calif.



New feeder known as Inject-Ta-Line has been developed by the company's Solvoid Division to feed its water-wetting material Solvoid into a stream of water in a hose line being employed to extinguish a fire. The unit can be adjusted for any concentration between ½ and 3 gal. of the wetting agent to each 1,000 gal. of water.

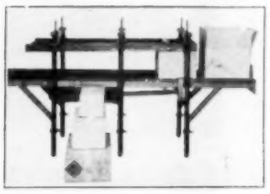
The treated water is particularly suited for use on Class A and Class B fires. Cost is about 1/5 per cent for the treating fluid per gallon of water treated. Water containing the wetting agent will not attack rubber hose, unlined hose, fabric, paint. It is easily washed out of fabrics with plain water.

The feeder is suitable for water delivery between 5 and 150 gpm. with line pressure at 20 to 300 pounds.

BREVITY—Identify by IEN - 9156 if you write the maker

PACKAGING . . Roller compressor holds cartons closed until glue dries

Source: VOL-U-METER CO.
P. O. Box 54-A, Buffalo 16, N. Y.



Conveyor sections, one above the other in this new equipment, are combined with a pneumatic cylinder and pusher plate to hold cartons on which the flaps have been glued and folded down until the glue dries. Cartons are positioned in front of the pusher plate at the right hand end of the machine where the lower conveyor section overlaps the upper one. The operator folds the flaps in after glue has been applied and actuates the air cylinder. This moves the carton to the left under the upper conveyor section which can be adjusted for height. Overall length of the equipment is subject to specification for a given capacity and a given holding time.

BREVITY—Identify by IEN - 9157 if you write the maker

LIGHTING . . Prize contest for outstanding lighting installations

Lighting Merit Award Competition
Room 818, 326 W. Madison St., Chicago 6, Ill.

Prizes total $2,500 for the Merit Award Competition to be held in conjunction with the 4th International Lighting Exposition and Conference. The exposition date is May 6 to 9, 1952. It will be held at the Cleveland Public Auditorium. The contest is open to owners and users of industrial and commercial lighting. Ask for an application blank at the Chicago address.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9158 if you write the maker

FAIRBANKS ALL-STAR TEAM

U-01 BRONZE GLOBE VALVE

• Renewable Composition Disc . . . a disc for every type of service
• Two Piece Union Bonnet . . . quick, easy disassembly; NO WEAR
• Radial Seat of Two Piece Union Bonnet . . . leakproof joint; rigid alignment

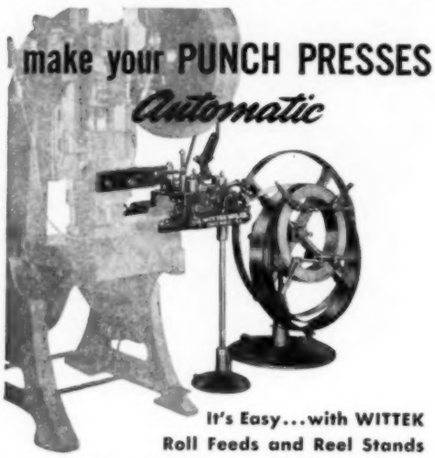
DART UNION
• Ground ball joint
• Leakproof
• High-test malleable iron body

THE Fairbanks COMPANY
393 LAFAYETTE STREET • NEW YORK 3, N. Y.
Branches: New York 3 • Pittsburgh 22 • Boston 10 • Atlanta, Ga.

CASTERS • DART & PIC UNIONS • VALVES • TRUCKS

BREVITY—Identify by IEN - 9159 if you write the maker

make your PUNCH PRESSES *Automatic*



It's Easy . . . with WITTEK Roll Feeds and Reel Stands

Wittek Roll Feeds handle any type of coiled strip stock and are made in single roll, double roll, and compound types with straighteners, in models to feed in any of four directions. They are reliable and accurate with simple, quick adjustment of feed length. Standard sizes and models meet a wide variety of press size and capacity conditions.
Wittek Reel Stands facilitate handling coiled stock.

Write for full particulars

WITTEK Manufacturing Co.
4336 W. 24th Place, Chicago 23, Illinois

Automatic ROLL FEEDS AND REEL STANDS

BREVITY—Identify by IEN - 9160 if you write the maker

***NEW* MAGNA BIT HOLDER**

A REVOLUTIONARY, LABOR SAVING TOOL. CUTS SCREW DRIVING COSTS 3 NEW WAYS

Hand starting or *pre-positioning screws* in assembly operations is *no longer necessary*; a high energy *permanent* magnet in bit chuck holds the bit and energizes it with 10 times the "pull" to hold the screw *firmly* on bit. Labor costs are cut.

Reduces bit costs through the use of super hard, low-cost interchangeable insert bits.

Reduces bit wear and replacement since the energized bit seats itself positively in the screw slot or recess.

Bit holders available for all makes of power and spiral drivers. Also super hardened tool steel insert bits for all types and sizes of screws.

Permanently Magnetic Magna-Tip Hand Screw Drivers . . . bits for all types and sizes of screws
and Magna-Tip Hex Drivers for hex head screws
U. S. Patent No. 2,550,775

Write for folder 56-C, information and prices.

MAGNA TOOL CORPORATION
779 Washington St. Buffalo 3, N. Y.

BREVITY—Identify by IEN - 9161 if you write the maker

Save time! Prevent accidents!

LIFT AND DUMP MECHANICALLY

BAGS
BARRELS
DRUMS
BOXES

REDUCE HANDLING COSTS with a Cesco Dumper. It handles up to 100 loads per hour, has a lifting cap. ranging from 100 to 1500 lbs. Both single- and multi-purpose portable models are built in standard dumping heights from 5 to 12 ft. Stationary models up to 16 ft. dumping heights. Push button controlled. Write for catalog.

COLSON EQUIPMENT & SUPPLY CO.
1317 Willow Street • Los Angeles 13, California

WRITE FOR CATALOG

CESCO SKIP HOIST DUMPER

BREVITY—Identify by IEN - 9162 if you write the maker

ALL PEERLESS MOTORS ARE

"Peerless-Registered"

MORE than 90% of all Peerless Motors are custom manufactured to meet the specific operating requirements of the equipment with which they are to be used. So we "Peerless Register" every motor before shipment. The words "Peerless Registered" are a trademark, recorded in the U.S. Patent office. Only Peerless Motors can bear this phrase, and only Peerless Motors offer you this protection.

This registration record is assurance to both you and your customer that the Peerless Motor has been properly designed for your equipment so as to give best possible performance and long, satisfactory service. And the registration record makes possible the quick identification of any Peerless Motor—anywhere.

THE PEERLESS ELECTRIC CO., WARREN, OHIO

Manufacturers of Quality Motors Since 1893

Single Phase • Polyphase • Direct Current • ¼ to 15 H.P.

Peerless-Electric MOTORS·FANS·BLOWERS

BREVITY—Identify by IEN - 9163 if you write the maker

"on the beam" packaging

for SPERRY AIRCRAFT INSTRUMENTS

in SPARKLING

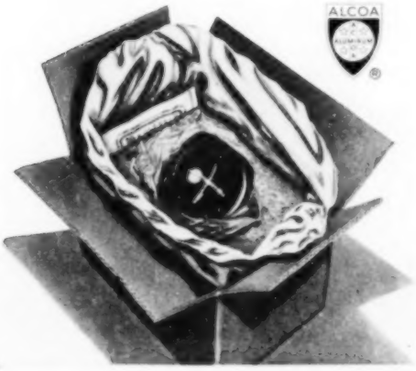
Alcoa Aluminum Foil

Safer, all-weather flying . . . that's the big news behind Sperry Gyroscope Company's aircraft instruments. Used by both military and commercial aircraft, Sperry instruments help pilots fly the correct flight path . . . keep them "on the beam."

Often shipped to far-off places for installation, sensitive instruments must be packaged to assure accuracy on arrival. Alcoa Aluminum Foil helps Sperry meet this requirement. Used as the liner for a specially constructed bag, sparkling Alcoa Foil forms a barrier against penetration by such damaging corrosive elements as extreme heat, cold, dirt, moisture.

Is Alcoa Aluminum Foil available for packaging *your* product? That depends on current government restrictions. Best qualified to answer this question are leading packaging firms—pioneers in protective packaging, in Alcoa Foil. May we send you their names? Write to: ALUMINUM COMPANY OF AMERICA, 1766J Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA



BREVITY—Identify by IEN - 9165 if you write the maker

STORING . . Steel tool chest, double wall design, locking front top

Source: PROTO TOOLS
2207-11 Santa Fe Ave., Los Angeles 54, Calif.

Welded assembly of double-wall sides, double reinforced top and bottom, and rounded corners characterize this new No. 9697 tool chest. The top is mounted on a piano-type hinge and overlaps the main housing to form a tight seal. A drop front is hinged to the top on the inside to cover all of the drawers when the chest is closed. A tumbler lock provides 3-way holding protection. Round-grip side handles hinge to a straight-out position to prevent pinching. Dimensions are 27 by 12 by 15 inches.

The chest contains two full-width two-compartment housing drawers measuring 2¾ in. in depth, four half-width three-compartments drawers 1¼ in. in depth, a full-width top section partitioned into three compartments and a tote tray with three compartments measuring 21¾ in. in width.

In addition to the new chest the company announces improvement in design of boxes No. 5295 and 5495 to hold socket wrenches in ⅜ and ½-in. drive sets respectively. Corners are rounded. Drawn one-piece construction is employed without laps for the tops and bottoms. A reinforcing flange is employed along both sides of both sections.

BREVITY—Identify by IEN - 9166 if you write the maker

FEEDING . . Reciprocating machine meters forgings to heat treat furnace

Source: MICHIGAN CRANE & CONVEYOR CO.
1412-16 21st St., Dept. 12-E, Detroit 16, Mich.

Small forgings are filled into a hopper at the bottom of this new machine. They move by gravity to the first of a series of vertically reciprocated slides comprising an incline between the receiving and the upper discharge side of this new Man-O-Seel furnace feeder. The slides reciprocate in alternate upward and downward movement between adjacent units so the work is moved in a general upward direction from one step to the next to issue at the delivery end in measured amount. Metering action results from the fact that excess parts will fall from the slides as they move upward until only the correct number remains. These will be handled without spilling the remaining upward steps.

The machine will load from 500 to 4,000 lb. per hour of small stampings, screw-machine parts, small forgings, castings. The assembly shown measures 18 in. in width by 8 ft. in height and length. Discharge height is 65 in. above the floor. Feed height is variable from floor level to 18 in. above it. List price is $3,950. Other sizes are available, each assembly built to specification.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9167 if you write the maker

The ALL NEW
CLARK TYPE "CY"
AC MOTOR STARTER
features an
ENTIRELY NEW PRINCIPLE
OF ARC INTERRUPTION

Here's how the Arc is Extinguished

Arc is extinguished by applying the effect of the blowout coil *concentric with the contact.*

Phantom view showing Arc-shield

Steel arc chambers and center studs form the magnetic circuit around each contact. The magnetic field is concentrated in a cone from the center stud that supports the upper contact, to steel rim surrounding the lower contact. Two different actions occur, changing each half cycle with the reversal of the current.

In one current direction the arc is forced to the outer edge of the upper contact, lengthened and rotated. In the other, the arc is rotated and forced to the middle of the upper contact. In each case, the magnetic field tends to quench the arc, either by lengthening it or confining it.

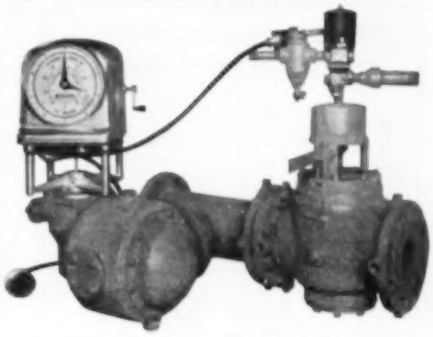
Constant forced rotation of the arc, moving continually from a hot to a cold spot, minimizes burning and pitting of contacts.

Let a CLARK application engineer show you what this new line of CLARK "CY" starters means to you in increased production and lower maintenance.

THE CLARK CONTROLLER CO.

ENGINEERED ELECTRICAL CONTROL • 1146 EAST 152ND STREET, CLEVELAND 10, OHIO

BREVITY—Identify by IEN - 9168 if you write the maker



AUTOMATIC VALVES

for hard-to-reach places

Automatically operated jacketed valves, which have long been used with H & B Fluidometer metering systems, are now available for use where remote control is required without automatic batching features. See typical application above.

Valves of either straight, 3-way plug cock, or straight globe type are available for steam, air or hydraulic operation. These valves provide the solution to many problems of actuating valves in hard-to-reach places.

Write for Bulletin FI-49.

HETHERINGTON & BERNER INC.

725 Kentucky Ave. Indianapolis 7, Ind.

BREVITY—Identify by IEN - 9169 if you write the maker

the No.1 money saver for your plant

DEWALT

gives you more work for your money in:

- ***PLANT MAINTENANCE***
- ***PATTERN SHOPS***
- ***CRATING AND BOXING***

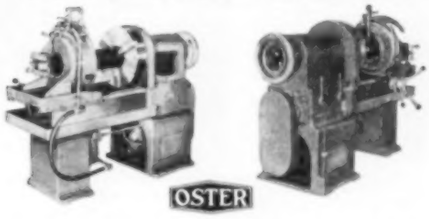
This versatile, all-purpose DeWalt is never idle! In *your* plant, it can take care of all your woodworking needs—quickly, accurately and safely. It is *many* machines in one! Simply by changing the cutting tool, you have another machine! Write for catalog. DeWalt, Inc., Dept. IE-9, Fountain Ave., Lancaster, Penna.

DEWALT A subsidiary of American Machine and Foundry Co.

BREVITY—Identify by IEN - 9170 if you write the maker

NEW

OSTER THREADING MACHINES



OSTER

Cutting-off speed is approximately three times the threading speed of the new Oster "WILCO" pipe and bolt threading machines. The correct speeds for threading and cutting-off are obtained through the transmission and TWO SPEED motor. A single die-head covers the entire range of each machine. One set of holders and dies threads all sizes, right hand American National Standard of the same pitch without change. Other developments make the new Oster "WILCO" machines highly efficient for maintenance and production threading. Standard range of No. 714 "WILCO": 1" to 4" pipe; extra range ½" and ¾" pipe; bolt range ¼" to 3". Standard range of No. 716 "WILCO": 1" to 6" pipe; bolt range 1" to 4".

THE OSTER MANUFACTURING COMPANY

2053 East 61st Street • Cleveland 3, Ohio, U. S. A.

BREVITY—Identify by IEN - 9171 if you write the maker

COSMOLINE COATED GUN COMPLETELY DEGREASED

IN LESS THAN 4 MINUTES

Four 20mm. guns heavily coated with Cosmoline are raised from the degreaser in a clean, dry condition, ready for subsequent operations.

WITH A PHILLIPS *Electric* VAPOR DEGREASER

HERE was a really tough metal cleaning problem. Cline Electric Manufacturing Company, Chicago, had to remove Cosmoline from 20mm. guns before modification operations on the guns. Cline purchased a Phillips electric batch-type degreaser to handle the job. As a result sixteen guns are being degreased per hour at a savings of 85% on cleaning costs per gun.

Here is another instance of how Phillips degreasers cut costs through faster, more thorough, more economical metal cleaning. For the answer to your degreasing problems check with Phillips.

SEND FOR YOUR FREE COPY OF NEW ILLUSTRATED DEGREASER BULLETIN

Phillips MANUFACTURING COMPANY
3461 Touhy Avenue • Chicago 45, Illinois
Engineered Metal Cleaning Equipment

BREVITY—Identify by IEN - 9172 if you write the maker

SPEEDS POLISHING, GRINDING and BUFFING

● Amazing grinder head speeds grinding, polishing, buffing and snagging operations. **Prove it** yourself with free trial! Write us NOW.

NU-MATIC GRINDERS

$17.50 each
F.O.B. Cleveland
(Wheel with abrasive hand only)

Send for FREE Illustrated Literature

● Just inflate the rubber drum with 3 to 10 lbs. air pressure, depending on operation. You easily vary the air pressure as well as type and number of grit . . . to achieve an infinite variety of operations on any surface. Dynamic balance . . . no chatter or bounce. Eliminates hand filing.

Faster, better, easier . . . on stands, portable tools, backstand idlers . . . wherever ordinary grinders are used . . . on any kind of surface. On flat surfaces, Nu-Matic presents for greater contact area because Nu-Matic is resilient! And it produces a straight pattern . . . like a hand finish.

Write NOW for your 25-day FREE TRIAL, complete instructions and illustrated literature. Send trial purchase order, or request a trial Nu-Matic on your letterhead. No obligation. Nu-Matic Grinders, Inc., 8221 Carnegie Ave., Cleveland 3, Ohio

BREVITY—Identify by IEN - 9173 if you write the maker

New Hydraulic Gang Plank

Speeds Loading 50%

No excavation required for installation.

Globe Hoist has come through with a most effective "aspirin" for your loading headaches. It is a new hydraulic ramp that speeds up loading or unloading by 50% with a corresponding cut in time and labor costs. When a truck backs up to your dock, pressure on a button raises or lowers the ramp. A sturdy "lip" rests firmly on the truck bed. The ramp is self-leveling and "rides" with the truck as the springs flex.

This latest Globe Self-Leveling Ramp operates by air, air-oil, or motor pump, and is simply bolted on a load pad, thus requiring no excavation. It is easy to install. Quickly pays for itself.

Got a Lifting Problem?
GLOBE
has the answer

Muscle is the world's most wasteful lifting power. A Globe OnLIFT will do it cheaper and better.

Write today for "Modern Lifting." It is full of interesting information on Self-Leveling Ramps, Machine Loading Lifts, Industrial Truck Service Lifts, Production Lifts, etc.

Write for Bulletin IE-300

GLOBE HOIST COMPANY, 100 E. Mermaid Lane, Philadelphia 18, Pa.
(Factories at Des Moines, Iowa and Philadelphia, Pa.)

BREVITY—Identify by IEN - 9174 if you write the maker

SHREDDING . . Rotary knife machine cuts scrap paper into long shreds

Source: SHREDMASTER CORP.
203-7 Willoughby Ave., Brooklyn 5, N. Y.

New design of the company's table-model shredding machine, previously described IEN-3764-49, now employs a 1½-hp. motor as compared to the 1-hp. unit in the previous machine. The machine is equipped with a new housing cover and is characterized by essentially noiseless operation. It has a 14-in. throat and a series of rotary knives that can be set to cut shreds measuring 1/16-in. in width or greater in 1/16 in. multiples. Width capacity, based on newsprint, is about 400 lb. per hour.

The machine will take flat sheets, paper rolls, small pieces, crumbled waste, pass books, cards, premium packages and other materials such as cellophane and foil. The rotary design provides self-sharpening action for the cutters so they require removal for complete sharpening not oftener than once in three or four years. Feed is at about 120 ft. per minute. Dimensions are about 32 by 25 by 19 inches. Weight is approximately 300 pounds.

BREVITY—Identify by IEN - 9175 if you write the maker

MARKING . . Traffic line machine feeds paint to spreader by gravity

Source: UNIVERSAL MARINE & MFG. CORP.
137-1 Alexander St., Yonkers 2, N. Y.

Line width from 2 to 8 in. can be set at the new sled-type spreader on the company's recently-improved traffic-line machine. The spreader will handle paint of any standard type. The machine can be employed indoors or outside. Two sizes mount 5 and 9-gal. tanks from which the paint flows through a tube line to a distribution apron that spreads it evenly to finger rollers in the spreader head. Application can be made on any reasonably smooth surface such as macadam, concrete, asphalt, wood.

BREVITY—Identify by IEN - 9176 if you write the maker

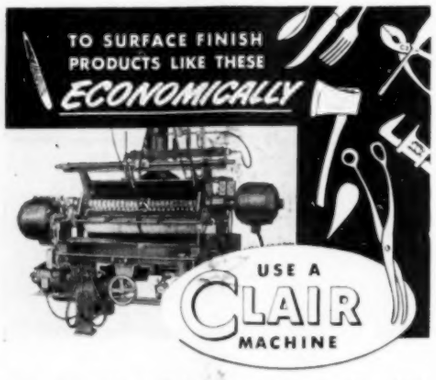
BEARINGS . . New American Standard covers tolerances on ball and roller bearings

American Standards Association
70 E. 45th St., Room 2845, New York 17, N. Y.

Standard B 3.5-1951 designates new 20-page booklet sponsored by the Association's Mechanical Standards Committee. It contains 15 tables specifying tolerances on bore, outside diameter, width, other bearing dimensions in different grades on ball, needle, tapered roller bearings. List price is 75 cents.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9177 if you write the maker



From the seven basic Clair designs, a custom-made machine can be developed to give greatest efficiency in your surface finishing operation. With totally enclosed, abrasion-proof hydraulic circuits and adjustable controls, Clair Machines provide the precision and trouble-free operation necessary for efficient surface finishing on a production basis.

Write for technical data

CLAIR MANUFACTURING CO., INC.
Specialized Machine Equipment For Glazing and Polishing Operations
OLEAN, N. Y.

BREVITY—Identify by IEN - 9178 if you write the maker

FOR WIDEST RANGE OF HOIST TYPES, CAPACITIES & CONTROLS

With Outstanding Wear-Eliminating Features

Single or multiple-speed control with positive load brake. "Balanced drive" distributes all stresses evenly. Oil bath lubrication assures long, trouble-free operation. Sealed housing keeps out abrasive dust and moisture. Anti-friction Bearings.

Types

Log suspension
Hook suspension
Base type
Push trolley
Geared trolley
Motor-driven trolley

Floor Operated Controls

Pendant rope
Push button
Outrig
Remote

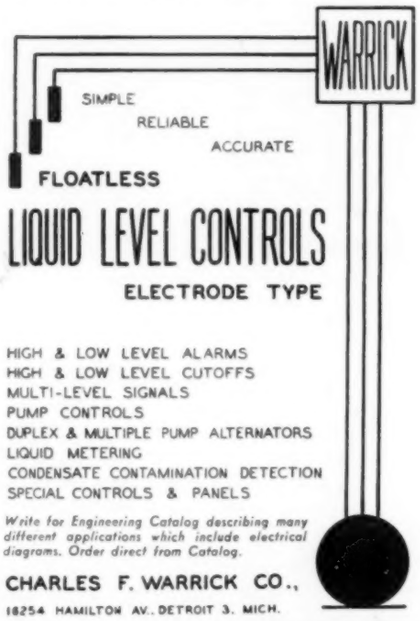
Ratings and Capacities

Cap., Lbs.	Hoisting Speeds A-c	Hoisting Speeds D-c	Lift, Feet
500	35 to 72	40 to 68	Up to 110
1,000	20 to 75	20 to 75	Up to 185
2,000	20 to 75	20 to 52	Up to 185
3,000	24 to 68	28 to 55	Up to 166
4,000	18 to 56	20 to 43	Up to 166
6,000	18 to 50	20 to 38	Up to 128
8,000	13 to 40	10 to 29	Up to 163
10,000	20 to 32	12 to 23	Up to 118
15,000	20 to 30	15 to 22	Up to 87
20,000	16 to 24	12 to 17	Up to 87
30,000	15	13	Up to 43
40,000	10	10	Up to 43

Write for free literature

Shepard Niles CRANE & HOIST CORPORATION
456 SCHUYLER AVE. • MONTOUR FALLS, N. Y.

BREVITY—Identify by IEN - 9179 if you write the maker



LIQUID LEVEL CONTROLS

ELECTRODE TYPE

HIGH & LOW LEVEL ALARMS
HIGH & LOW LEVEL CUTOFFS
MULTI-LEVEL SIGNALS
PUMP CONTROLS
DUPLEX & MULTIPLE PUMP ALTERNATORS
LIQUID METERING
CONDENSATE CONTAMINATION DETECTION
SPECIAL CONTROLS & PANELS

Write for Engineering Catalog describing many different applications which include electrical diagrams. Order direct from Catalog.

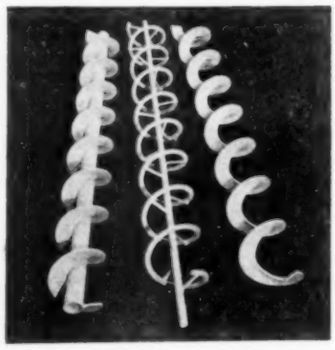
CHARLES F. WARRICK CO.,
18254 HAMILTON AV., DETROIT 3, MICH.

BREVITY—Identify by IEN - 9180 if you write the maker

WORMS AND SPIRALS

FOR ALL TYPE

SCREW CONVEYORS



IMMEDIATE DELIVERY
PRICES ON APPLICATION

JAMES EAGEN & SONS
WEST WYOMING, PA.

BREVITY—Identify by IEN - 9181 if you write the maker

CUT COSTS with CORBIN Self-Tightening HOSE CLAMPS

Now used by leading manufacturers of HOME APPLIANCES • AUTOS AIRCRAFT • PUMPS • MACHINERY AIR CONDITIONERS

You can save time and money with Corbin Hose Clamps—*the self-tightening clamps that are installed in seconds to hold tightly for years!* To install: simply squeeze ends of clamp with pliers, slip clamp over connection, release—and *instantly* its spring tension creates a uniformly-tight, lasting seal *even when used with irregular castings, tube or hose!*

Corbin Hose Clamps fit hoses in sizes from ⅝" through 2⅝" O.D. They are made of heat-treated steel, protected against rust and corrosion; are used on rubber, plastic and fabric hose—to convey air, gases or liquids.

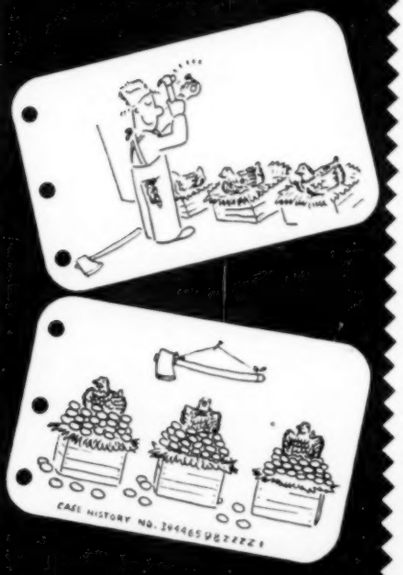
SAMPLES AND SPECIFICATIONS

Send today for specification sheet and samples! A trial will show you how efficiently these low-cost, time-saving clamps meet every hose connection need.

CORBIN HOSE CLAMP DIVISION
THE AMERICAN HARDWARE CORPORATION
New Britain, Connecticut

BREVITY—Identify by IEN - 9182 if you write the maker

INGENUITY can solve any problem



if YOUR PROBLEM

involves the higher production of threaded parts

HY-PRO TAPS

can help you to a solution

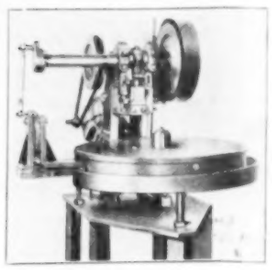
HY-PRO TOOL CO.
NEW BEDFORD, MASS. U. S. A.
Subsidiary of Continental Screw Co.

Order from your distributor or call the HY-PRO SALES ENGINEER

BREVITY—Identify by IEN - 9184 if you write the maker

PRESS . . Motor driven, 5 ton, includes indexing circular work table

Source: de CASTRO & ASSOCIATES
1515 Santa Fe Ave., Los Angeles 21, Calif.



Speedex trade names new 5-ton punch press with a crank-connected circular indexing table, which is available in 12, 15 or 24-in. diameter. The press has a 1 or 2-in. stroke. Index action is by a cam on the crankshaft. The cam can be rotated to adjust timing between the press movement and the index action. A lock secures the table in position for each power stroke and remains locked until the ram reverses.

BREVITY—Identify by IEN - 9185 if you write the maker

METAL TREATING . . Coloring process to finish and rustproof ferrous metals

Source: MITCHELL-BRADFORD CHEMICAL CO.
2444-48 Main St., Stratford, Conn.

Process can replace plating

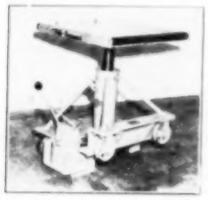
Black oxide finish is produced on ferrous metals by immersion in a water solution containing 6½ lb. of Black Magic salt per gal. in a new Type-A salt which calls for a boiling temperature of 290 deg. F. Work pieces are left immersed for a short interval, then are rinsed in cold water, heated in hot water and dipped in an oil or wax the company is prepared to supply. The resulting finish presents excellent appearance and is resistant to corrosion.

The salt is self-rectifying to prevent build up of colloidal red-iron oxides in the bath and to neutralize other contaminants which might be introduced. As a result, steel parts with brazed areas can be processed without difficulty.

BREVITY—Identify by IEN - 9186 if you write the maker

ELEVATOR . . Hydraulic table for track mounting serves a press line

Source: RAYMOND CORP.
35-82 Madison St., Greene, N. Y.



Special assembly of the company's hand-hydraulic elevating table is shown in the illustration. The table is installed in front of a line of presses that employ curing molds in a rubber-processing plant. It provides 16 in. of vertical movement between 28 and 44 in. above the floor to place the molds on platens at different elevations as required in the line. The table will handle a one-ton load. A roller at the front edge assists in moving a mold on and off. Mold stops are provided at the outside edge.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9187 if you write the maker

FOR FINER APPEARANCE, PERMANENT READABILITY

Identify your products with metal name plates by

CHICAGO THRIFT-ETCHING CORPORATION

We'll gladly quote, without obligation to you, on your requirements for name plates, instruction plates, dials, panels, scales, etc. We are equipped also to apply special finishes to aluminum products and parts, including ANODIZING by the exclusive Alumilite process. Write today for detailed information and quotations.

CHICAGO THRIFT-ETCHING CORPORATION
1555 North Sheffield Avenue, Chicago 22, Ill., Dept. F
SUBSIDIARY OF DODGE MFG. CORPORATION, MISHAWAKA, IND.

BREVITY—Identify by IEN - 9188 if you write the maker

Newark manufacturer steps up production of metal containers

● A Newark, New Jersey, plant recently installed a Cyclone Flat Wire Metal Conveyor Belt to carry freshly-enameled metal containers through heated drying areas. With both large and small containers, drying time has been substantially reduced and production stepped up.

If your operations call for baking, drying, annealing or other uses of heat, it will pay you to take advantage of Cyclone's wide experience in furnishing the right kind of conveyor belt. For complete details, get in touch with the nearest Cyclone sales office. Meanwhile, write for Catalog No. 4.

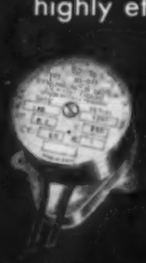
CYCLONE FENCE DIVISION
(American Steel & Wire Company)
DEPT. C-90, WAUKEGAN, ILLINOIS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

CYCLONE METAL CONVEYOR BELTS
UNITED STATES STEEL

BREVITY—Identify by IEN - 9189 if you write the maker

precision built . . .
powerful . . .
highly efficient . . .

Cramer



synchronous timing motor

Widely used for applications requiring a constant speed at a given frequency, the Cramer Type SX Synchronous Motor is a self-starting permanent magnet type motor . . . producing an exceptionally high torque. Compact . . . precision-built . . . with output speeds . . . from 60 RPM to 1/24 RPH. Write for complete data.

THE R. W. CRAMER CO., INC.
BOX 16, CENTERBROOK, CONN.
INTERVAL TIMERS • RESET TIMERS • CYCLE TIMERS • PULSE TIMERS
TIME DELAY RELAY • RUNNING TIME METERS • PERCENTAGE TIMERS

BREVITY—Identify by IEN - 9190 if you write the maker

Put Compressed Air to work *EFFICIENTLY*

Schrader Quick Acting Couplers—These couplers give you air when and where you want it with the plug-in convenience of electricity. Push to connect, twist slightly to disconnect. No accidental uncoupling is possible, because a man made twist is necessary to disconnect the two parts.

Schrader Hose Reels—Tuck hose away under benches, over head or directly on machines. Protects hose from grime, grease and traffic abuse.

Schrader Blow Gun—This stainless steel gun stands up under every use. It is practically indestructible. This gun can be equipped with different noses or tips, including the famous Schrader adjustable type nozzle. Other types of guns are also available.

Do you have the Schrader Complete Line Catalog? Write for it today!

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Inc.
458 Vanderbilt Avenue, Dept. D-6, Brooklyn 17, N. Y.

BREVITY—Identify by IEN - 9191 if you write the maker

STURTEVANT DUSTLESS BLENDERS

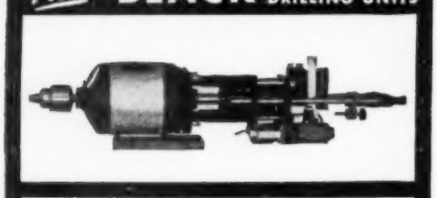
Thoroughly Blend Substances into an Inseparable Mass

The 4-Way Mixing Action of the Sturtevant Dustless Blenders thoroughly mixes two or more substances into an inseparable whole . . . every part of which is the same analysis. Single receiving and discharging opening insures tight sealing during mixing process. "Open-door" accessibility permits thorough cleaning. The fast, accurate mixing operation increases output . . . cuts mixing costs. Mixing capacities from ¼ ton to 75 tons per hour. Write.

STURTEVANT MILL COMPANY
113-A CLAYTON STREET • BOSTON 22, MASS.

BREVITY—Identify by IEN - 9192 if you write the maker

New BLACK SELF-CONTAINED DRILLING UNITS



NO SPLINES — Self-contained units, at low cost, for drilling, tapping, chamfering, reaming and similar operations.

NO GEARS — New principle employs traversing motor shaft for work spindle, applies even torque with practically no end play. Drill has air feed for rapid advance to work—hydraulic control to completion of work cycle with uniform feed. Tapping unit controlled so tap follows its own lead without chamfering first thread or stripping threads on return stroke. Easy adjustment—depth accuracy to within .001".

NO CAMS

NO CLUTCHES

NO REVOLVING WEIGHTS — Operate in any position. Wide range of speeds and sizes.

Write for complete information

THE BLACK DRILL COMPANY
1378 EAST 222nd STREET CLEVELAND 17, OHIO

BREVITY—Identify by IEN - 9193 if you write the maker

Need VOLUME on SMALL PARTS like these?

Investigate MULTI-SWAGE

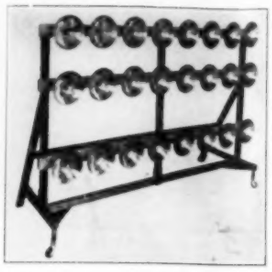
● If it's VOLUME you need on small tubular metal parts similar to these, be sure to look into Bead Chain's MULTI-SWAGE Process. Many prominent users of solid pins for electronic and mechanical purposes have cut costs by switching to Multi-Swaged *tubular* pins . . . without sacrificing strength or accuracy. Multi-Swage Parts serve in a wide variety of electronic and mechanical products. Send part (up to ½" dia. and to 1½" length) and your specs for a quotation. Or write for DATA BULLETIN.

The BEAD CHAIN Mfg. Co.
TRADE MARK
59 Mountain Grove St., Bridgeport 5, Conn.
Manufacturers of BEAD CHAIN — the kinkless chain of a thousand uses, for fishing tackle, novelty, plumbing, electrical, jewelry and industrial products.

BREVITY—Identify by IEN - 9194 if you write the maker

DRYING . . Portable infrared unit mounts lamps in multiples of four

Source: NORTH AMERICAN ELECTRIC LAMP CO.
1016 Tyler St., St. Louis 6, Mo.



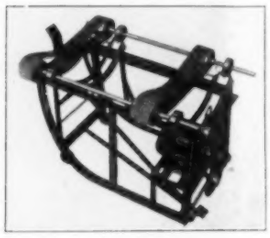
Nalco Unistrut designates new portable assembly of the company's standard G-25 infrared lamps in multiples of four with a common backing. The lamps are inside-aluminumed self-reflecting type. Each unit of four is wired ready for application on specified commercially available voltage and phase. The strips assemble on the Unistrut frame in any arrangement required to meet given drying operations. They can be moved and rearranged as conditions change.

The assembly shown in the illustration measures 5 ft. in width by 3½ ft. in height. The lamps are 3½ in. in width by 5⅛ in. from front to back.

BREVITY—Identify by IEN - 9195 if you write the maker

MIXING . . Portable machine picks up and rotates fiber drums

Source: MORSE MFG. CO.
120-24 Dickerson St., Syracuse 2, N. Y.



New assembly of the company's wheel-mounted drum cradle includes a pair of flat belts with chain connection to a driving motor in an arrangement to cradle a 16 to 24-in. fiber drum and turn it at speeds from 10 to 30 rpm.

The cradle can be tilted on its curved runners to stand in vertical position beside a drum resting on end on the floor. A lever-type tool is included to grip the drum and tilt it and the cradle back to horizontal position for rotation. When the contents have been mixed both cradle and drum can be tilted back to vertical position on the floor.

BREVITY—Identify by IEN - 9196 if you write the maker

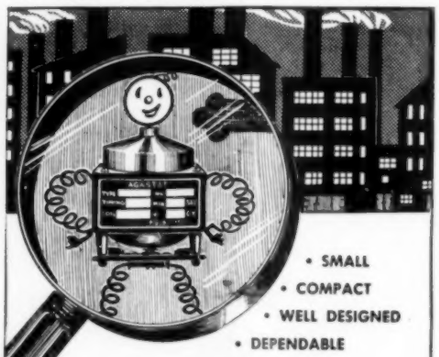
PACKAGING . . Collection of technical papers on the subjects of packaging and material handling

Society Industrial Packaging & Materials Handling Engineers
18-22 W. Jackson Blvd., Chicago 4, Ill.

Educational program at the Packaging and Materials Handling Exposition last October has been printed in book form. List price of the 224-page "Proceedings" is $4. The technical papers cover a variety of corrosion-proofing, packaging, handling equipment, containers, organization methods.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9197 if you write the maker



• SMALL
• COMPACT
• WELL DESIGNED
• DEPENDABLE

AGASTAT
TRADE-MARK
TIME DELAY RELAY

PROTECTS BIG INDUSTRY PROCESSES

AGA AIRPORT LIGHTING — AGA AGASTAT RELAYS — AGA TEMPERATURE RELAYS — AGA AGASTAT RELAYS

Address inquiries to Special Products Division
American Gas Accumulator Company
1027 Newark Avenue, Elizabeth 3, New Jersey

BREVITY—Identify by IEN - 9198 if you write the maker

Actually combines 3 types of oven-heating . . . with amazing results in heat-processing

Burners are inverted, in this type of fast-speed "Una-Ray" Oven for drying wallpaper print and vinyl coated paper. Provides—with safety!—the higher temperatures needed for drying plastic coatings.

● THE CARBOMATIC "UNA-RAY" OVEN (gas-fired) combines the advantages of three types of oven-heating: (1) infra-red radiation, (2) convected heat, (3) heated air, with added turbulence. Adapted to a wide range of industrial heat-processing and drying operations, this new oven cuts equipment cost and reduces installation space required . . . provides instant heat, with record efficiency in heat utilization and lowest fuel expense . . . speeds up operations . . . sets new safety standards . . . decreases rejects and spoilage . . . insures lowest-cost, more uniform, highest-quality production. Temperatures are controlled accurately and automatically—in any number of different heat zones. A big step forward in oven design-engineering!

Write for Bulletin N-9

CARBOMATIC CORPORATION, Pioneer Mfrs. of Infra-Red Heat Generators
24-81 47th STREET LONG ISLAND CITY 3, N. Y.

CARBOMATIC "UNA-RAY" OVEN

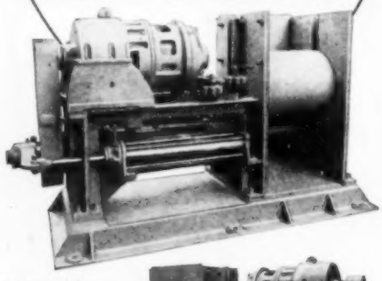
BREVITY—Identify by IEN - 9199 if you write the maker

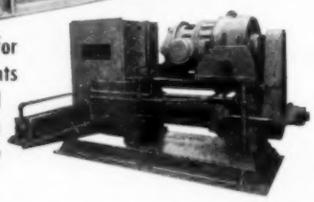
Salvage

ALUMINUM · STEEL
BRASS · COPPER
LEAD or WIRE

Faster, More Economically

The New McLanahan SCRAP BUNDLER





Designed for use in plants of small or large capacity

If your metal scrap or wire is of a stringy nature, you need the new McLanahan scrap bundler for use with your slitting equipment. This new machine, the result of constant research and product development, quickly and economically bundles metal scrap into cylinders approximately 16" to 18" in diameter. Easy to handle, ship, store or remelt . . .

Write Today for Descriptive Bulletin

McLANAHAN and STONE Corp.
Hollidaysburg, Pa. SINCE 1835

BREVITY—Identify by IEN - 9201 if you write the maker

PERMANENT PROTECTION
for man and machine with
ELASTICONE
GUIDE PIN COVERS

Protects Pins and Bushings from nicks & scratches. Prevents injuries to Die Setters & Operators.

JUST SNAP INTO PLACE
NO TOOLS REQUIRED
NO INSTALLATION COSTS

Elasticone Guide Pin Covers are manufactured in all stock sizes. Specify O.D. of Bushing and full open height of Set when ordering.

Write today for Technical Data Sheets

Central Safety Equipment Co.
2200 E. HUNTINGDON STREET
PHILADELPHIA 25, PA.

BREVITY—Identify by IEN - 9202 if you write the maker

THE VALVE THAT WAS DESIGNED FOR
PETROLEUM
CHEMICAL
SERVICE

THE
Cameron
NON-LUBRICATED
LIFT-PLUG VALVE

Originally designed for acid and light hydrocarbon service and first tested and proved in one of the nation's largest wartime alkylation units, the Cameron valve has since distinguished itself in all sorts of difficult petro-chemical services—chlorine, caustic, ammonia, gas distillate, ethylene oxide, butane, propane, molten sodium, oilfield and others.

The Cameron Non-Lubricated Lift Plug Valve combines the best features of gate and plug valves with a number of new mechanical innovations. Test it in your most difficult service. See for yourself how easily it operates and how tightly it seals, yet it requires no lubrication. Consequently the possibility of product contamination and clogging of metering equipment is eliminated. No periodic maintenance. No lubrication expense.

A descriptive booklet will gladly be sent to interested operators on request.

1 LIFT-PLUG ACTUATOR lifts, turns and reseats plug in only three-quarters of a turn of the operating wrench.

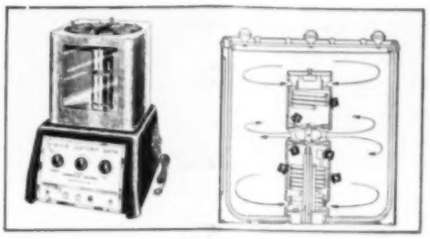
2 SEPARATE, RENEWABLE SEAT: Pressure-created body deflections and line strains cannot destroy the geometry of the fit between sealing surfaces because they cannot be transmitted to the separate seat.

Cameron
IRON WORKS, INC.
P. O. Box 1212 Houston, Texas
Export: 74 Trinity Place, New York, N. Y.

BREVITY—Identify by IEN - 9204 if you write the maker

TESTING . . Constant temperature bath rates minus 5 to plus 107 deg. C.

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.



Pyrex glass cylinder, 15 in. in diameter and height, provides capacity of about 10 gal. in this new Isotemp bath for laboratory application. The cylinder is enclosed in a rectangular steel housing in the front of which is a rectangular window. That portion of the glass element which faces the window is clear. The other portion is sand blasted and coated with a white chemically-resistant enamel. The bottom of the bath has also been sand blasted and is illuminated by a circle of fluorescent light. The result is a clear shadowless illumination throughout the bath.

Operating accessories are brought up through the bottom in a 4-in. nickel-plated brass column through the axis of which runs a stirrer shaft driven by a 1,150-rpm. motor with permanently-sealed ball bearings. Included in the cylinder with the impeller assembly is a heating coil at the bottom, an actuating element for the electronic temperature control and, optionally, a cooling coil and cover near the top. Action of the stirring equipment provides circulation in the bath several times each minute. The arrangement leaves the top of the unit clear to provide eight 2½-in. openings, each with a separate cover, for work and apparatus.

Two models are available for operation on 110 or 220-volt 50/60-cycle ac. List price for either model is $1,100 without the cooling coil. It is $1,152 with the coil.

BREVITY—Identify by IEN - 9205 if you write the maker

SEPARATING . . Permanent magnets remove tramp iron in textile equipment

Source: ERIEZ MFG. CO.
1303 E. 12th St., Erie, Pa.

Illustrated is new application in multiple assembly of the company's permanent magnet over the spiked apron leading to a mixing picker. Wool is the material being handled. The magnet assemblies lie in a rack under which the material is being forwarded. The magnetic action attracts ferrous pieces from the wool and holds them for removal after the magnet assemblies are hinged up as shown to the left. Each installation is made to specified dimensions and holding capacities. Each is guaranteed to maintain its magnetic ability for the life of the machine on which it is used.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9206 if you write the maker

FOR YOUR
STAINLESS STEEL FASTENERS... IT'S ALLMETAL
for quality and delivery

ALLMETAL, Specialists in Stainless, Produce Stainless Products Exclusively

ALLMETAL
the leading source for Stainless Screws, Nuts, Bolts, Washers, Pins, Bushes. Made right, Priced right. "AN" and Standard Types carried in stock. Phillips Recessed Head Screws and Specials available too.

WRITE FOR CATALOG K

MANUFACTURERS SINCE 1929
ALLMETAL
SCREW PRODUCTS COMPANY, INC.
33 GREENE STREET NEW YORK 13, N. Y.

BREVITY—Identify by IEN - 9207 if you write the maker

THEY'VE GOT WHAT IT TAKES TO HANDLE ANY JOB AND KEEP A TIGHT GRIP ON RISING COSTS!

ILLINOIS GLOVES
ARE BUILT TO LAST

Illinois Gloves are made to stand up under the hardest wear . . . they're thoroughly tested for abrasion and tensile strength when in contact with oil, acids, heat or water. And because Illinois Gloves give you longer, better service, they're your most economical buy in the long run!

Write Industrial Division Illinois Glove Company for catalog & prices

ILLINOIS GLOVE CO., CHAMPAIGN, ILL.

BREVITY—Identify by IEN - 9208 if you write the maker

Fans!
FOR ALL INDUSTRY
"Standard Units or Custom Design"

Fans and blowers in a wide range of standard size units are available for specific air moving and ventilating requirements. Special, custom designed equipment can also be furnished, and our staff of engineers are at your disposal for competent advice on any ventilating problem. Send for our catalog today!

Top: Heavy Duty "MOBILE AEROSPOT." Sizes, 24" to 36" Dia.
Middle: 6-Blade "DYNAFLO-W" Unit. Also available in 2 and 4 Blade types. Sizes, 16" to 36".
Bottom: "DUCTYPE" Direct Driven Blower. Single or tandem fan units. Also available with belt drive. Sizes, 16" to 36".

SOUTH BEND AIR PRODUCTS, Inc. 307 E. COLFAX AVE. SOUTH BEND, IND.

BREVITY—Identify by IEN - 9209 if you write the maker

NEW and MOST POWERFUL
ROTARY ELECTRIC IMPACTOOL

SIZE 34-U
for 1¼" bolts

Weight—32½ lbs.
Height—10⅝"
1" square driver
110-volt AC-DC

— makes the toughest jobs easy.
— sold by leading automotive jobbers and distributors.

Ingersoll-Rand
11 Broadway, New York 4, N. Y.
623-18

BREVITY—Identify by IEN - 9210 if you write the maker

WATSON-STILLMAN HYDRAULIC POWER TOOLS

HYDRAULIC JACKS

These sturdy units, with either independent or integral pumps, are useful for many jobs in construction and maintenance. Capacities from 20 to 500 tons.

HAND PUMPS

Single and double plunger types, with reservoirs of different capacities to suit the job, these hand pumps have a wide application for operating small hydraulic tools, jacks and other hydraulic equipment, and for general hydrostatic testing purposes.

PORTABLE PIPE BENDERS

Bends all standard, extra heavy and double extra heavy steel pipe from 3/8 in. to 2 in. inclusive, as well as standard weight pipe up to 3 in. diameter. Also handles solid mild steel bars up to 2 in. diameter.

WIRE ROPE SHEARS

W-S wire, cable and bar shears provide years of trouble-free general service. They are light and portable for convenient on-the-job use.

Write for Bulletin A-5

9-1-24

Distributor Products Division
WATSON-STILLMAN
ROSELLE, NEW JERSEY

BREVITY—Identify by IEN - 9211 if you write the maker

CHESTER HOISTS CAN S-T-R-E-T-C-H or SQUEEZE to meet your needs!

LOW HEAD ROOM HOIST

As an example, for existing structures with low head room, or for reducing costs of new construction by permitting lower ceilings, this low head room trolley hoist may solve the problem. Fast service available on these and other types, in sizes from 1½ to 24 tons. Write for complete catalog.

CHESTER HOIST DIVISION
The National Screw & Mfg. Company
Lisbon, Ohio

IEN-1

BREVITY—Identify by IEN - 9212 if you write the maker

Foley Sharpened Saws CUT HIGH LABOR COSTS

Your saw operator's production jumps 28 to 40% when the saw he uses is sharpened on a new Model 61 Foley Automatic Saw Filer. His saw will cut faster, smoother, run cooler and stay sharp longer.

NEW MODEL 61 FOLEY AUTOMATIC SAW FILER

Prove it by 30 Day Trial in Your Own Shop

Try the Foley Automatic Saw Filer for 30 days in your own shop. You'll be under no obligation. See how it sharpens your hand saws, band saws up to 4" wide and cross-cut circular saws 3" to 24" in diameter. Notice how the Foley Automatic Saw Filer automatically corrects uneven teeth caused by poor filing and restores them to even size, shape and spacing. You'll say the Foley Automatic Saw Filer is a "must" for every well run woodworking plant.

FREE BOOK TELLS HOW — The instruction book that is with every Foley Automatic Saw Filer is yours for the asking. Here you can read how inaccuracies are eliminated through simple and positive adjustments. This book does a double job . . . helps you cut production costs with better cutting saws and shows you how to lower your saw maintenance costs.

FOLEY MFG. CO.
3369 N. E. 5th St., Minneapolis 18, Minn.
Please send instruction book and information on 30-day trial offer.
Name .....
Address .....

BREVITY—Identify by IEN - 9213 if you write the maker

CONVEYING . . Belts, rollers, power drives for complete installation

Source: STANDARD CONVEYOR CO.
64 Indiana Ave., North St. Paul 9, Minn.

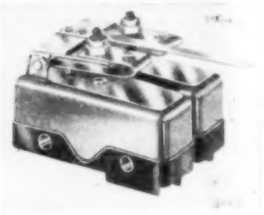
Handidrive trade names new assembly of belt, live-roller and gravity-roller conveyor sections with drives and take-up units, hand-roller assemblies, intermediate frame work, supports and hangers with which a user can make a complete conveyor installation. The individual units are a further development of the original Handidrive sections, previously announced in 1949 as packaged elements.

Five frame widths are 10½ to 26 in. between the channel side rails. The motor-equipped drive appplies beneath straight runs at any required points in the complete installation to drive the return runs of the belts. The side frames are punched for the rollers on 1½-in. centers. Belts that ride the rollers measure 8 to 24 in. in width in the five available sizes. Belt speed is 65 to 120 fpm. on a No. 1 unit with a geared-head motor. It is 90 to 150 fpm. with a 1,725-rpm. belted motor.

BREVITY—Identify by IEN - 9214 if you write the maker

SWITCH . . Ganged assembly of company's sensitive switches

Source: UNIMAX SWITCH DIVISION
460 W. 34th St., 15th Floor, New York 1, N. Y.



Illustrated is a double assembly, which also can be extended to include three or four, of the company's standard single-pole double-throw switches. Operation is by a single stainless-steel lever with individual adjustment so each switch can be set for simultaneous or sequence operation. Mounting is on two bushings passing through the regular holes in the switch housings.

U-shaped springs are located between the actuating lever and the switch buttons. Each is equipped with an adjusting screw secured by an Elastic locknut. Nominal contact rating is 10 amp. on 110-volt ac. A two-switch assembly measures approximately 2 in. in length by 1⅜ in. in width. The housing is about ⅞ in. in height. Operating force is 1 to 2 oz. per switch. Release force is 0.5 to 2 oz. per switch. Movement differential is maximum at 0.06 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
All products are listed in the index, page 114

BREVITY—Identify by IEN - 9215 if you write the maker

FOR LOWER COST *Gas Heating* select Janitrol UNIT HEATERS

LOWER INITIAL COST OPERATING COST MAINTENANCE COST

30 Sizes—Types

Janitrol offers the most complete line of Unit Heaters to meet individual requirements.

If you are planning on modernizing your heating—need supplementary heat for plant enlargement—if you are building or leasing an industrial building—you can save on equipment, operating and maintenance costs with Janitrol Unit Heaters. Remember, you get more worthwhile design features with Janitrol, plus proven performance.

Write today for complete specifications.

SURFACE COMBUSTION CORPORATION • DEPT. F, TOLEDO, OHIO

BREVITY—Identify by IEN - 9216 if you write the maker

Announcing . . . Binks New Model 29

The *only* LOW COST spray gun with all these HEAVY-DUTY gun features!

lightweight to reduce fatigue—gun weighs just 1¼ lbs.!

cartridge-type air valve for fast replacement—you remove the air valve as a complete unit.

brass & steel material passage for better finishes—paint contacts only non-corrosive brass or hardened steel.

and:
bottom air inlet—for perfect balance.
large air passages—mean minimum air pressure loss.
an attractive low price.

Send now for Bulletin 29 for details on prices, nozzle set-ups . . . and for cut-away view that clearly illustrates superior construction of Model 29.

Binks MANUFACTURING COMPANY
3120-34 Carroll Ave., Chicago 12, Ill.

BREVITY—Identify by IEN - 9217 if you write the maker

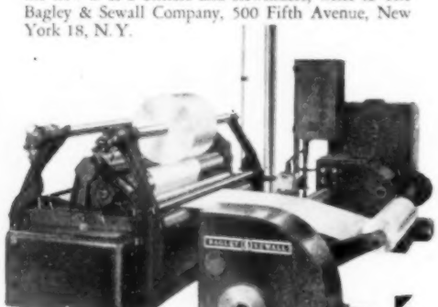
Cut Your Downtime on mill roll changing to 1 Minute or Less with the NEW B&S SHAFTLESS BACKSTAND

Money-consuming downtime on mill roll changing is cut to the bone by the wholly automatic B & S Shaftless Backstand. Here is what Mr. C. Carr Sherman, President of H. P. Smith Paper Co., has to say about this equipment:

"The engineering of this new unit indicates a fine understanding of the problems of the users of this type of equipment. The Backstand is much easier to handle as there are no shafts. It is also much easier and faster to make changes on it. I believe that changing rolls with this Backstand can be brought down to well under one half minute."

You may purchase the B & S Shaftless Backstand with or without the new B & S Slitter and Rewinder. The Backstand may be used on any type of rewinding equipment, as well as on waxing and laminating machinery, printing presses, etc.

For full details on the Shaftless Backstand and the new B & S Slitters and Rewinders, write to The Bagley & Sewall Company, 500 Fifth Avenue, New York 18, N.Y.



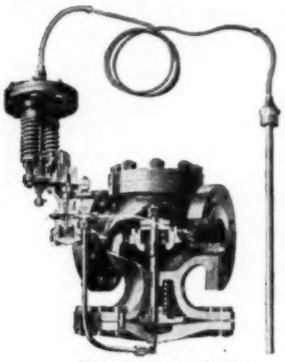
THE B & S
#55 SHAFTLESS BACKSTAND
features automatic tension and side register control; motor for raising and lowering mill roll arms, also motor for moving the arms to accommodate different width rolls. Entire working mechanism is totally enclosed.

BAGLEY & SEWALL
WATERTOWN, NEW YORK
designers and builders of QUALITY MACHINERY SINCE 1853
500 FIFTH AVE., NEW YORK 18, N. Y.
Foreign Representative: CASTLE & OVERTON, INC., 630 Fifth Avenue, New York 20, N. Y.

BREVITY—Identify by IEN - 9219 if you write the maker

LOW COST

Temperature Control



ET150 Temperature Regulator

Tops in performance for both storage and instantaneous heaters, this pilot-operated Spence regulator offers these important advantages:

SECO Metal Seats and Discs — 20 years experience has failed to produce a single case where SECO Metal has been cut by steam.

Packless Construction — minimizes friction . . . eliminates much time-consuming maintenance.

Large Metal Diaphragm—under usual conditions never requires replacement.

New bulletin gives complete data on the entire line of Spence regulators. They are made in sizes from 1/4" to 12" for service with air, steam, water, oil or gas. Write for your free copy of Bulletin 500 today.

SE-106

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

Spence

BREVITY—Identify by IEN - 9220 if you write the maker

WEATHERHEAD Reusable Hose Ends

AND HEAVY DUTY HOSE *permit quick make-up of flexible lines from stock*

No longer need design changes make flexible hose line inventories obsolete. Make up what you need to any length to meet every pressure demand—from standard hose and *Weatherhead All-Steel REUSABLE HOSE ENDS.*

1

Hold hex of body (right) in vise. Turn hose into body (left-hand thread) until end of hose barely bottoms in end fitting.

2

Lubricate the insert (left) and the inside of the hose end with oil. Thread insert into body.

3

Tighten the insert until the hex of the insert shoulders on the body. (Body has left-hand thread so that tightening effects seal both inside and outside of hose.)

Quick and easy—any length; meets every pressure demand; low, medium, medium-high and high. Figure for yourself the inventory savings when you simply stock random lengths of hose plus the proper sizes of REUSABLE ENDS.

***WRITE FOR DETAILS*—get new catalog No. H-1451A. Address The Weatherhead Company, Dept. F-1, 300 East 131st Street, Cleveland 8, Ohio.**

FIRST IN HYDRAULIC CONNECTIONS

The Mark of Quality

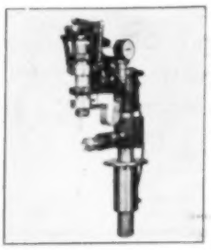
WEATHERHEAD

Plants at Cleveland, Ohio; Angola and Columbia City, Indiana; and St. Thomas, Ontario

BREVITY—Identify by IEN - 9222 if you write the maker

WELDING . . Spot weld head employs a stored energy power unit

Source: RAYTHEON MFG. CO.
188-92 Willow St., Waltham 54, Mass.



Model I-8 is a new head assembly representing further development of the company's spot-weld equipment, previously described IEN-6208-51, for electronic tube assembly and for use on small metal parts. Operation is through a metal bellows and a closed air circuit. Instantaneous electrode follow-up is inherent in the mechanism. Electrodes measuring 1/8 or 1/4 in. in diameter can be used interchangeably. The lower electrode can be mounted in horizontal or vertical position.

Opening between the faces of the two electrode holders is adjustable between 1 and 4 inches. The head mounts in a bench by means of a collar provided for this purpose. Overall dimensions are 3 1/2 by 8 1/2 by 9 1/2 inches.

BREVITY—Identify by IEN - 9223 if you write the maker

METAL TREATING . . Powder material forms phosphate paint base on steel

Source: DuBOIS CO.
118-22 W. Front St., Cincinnati 3, Ohio

Will remove cutting compounds

Ion-Kote is a white granular powder for solution in spray washing machines. It cleans metal surfaces and develops a hard dust-free phosphate surface that prevents rusting and serves as a first-class base for paint. Following application, it will retard corroding action for about 48 hr. prior to painting.

Packaging is in 500-lb. steel drums with list price at 27 cents per pound in single drums.

BREVITY—Identify by IEN - 9224 if you write the maker

CUTTING . . Plier type tool for steel strap to 3/4 by 0.035 inch.

Source: ACME STEEL CO.
2838-42 Archer Ave., Chicago 8, Ill.

The flat blade on the lower jaw of this new Type-E14AO cutter is designed for insertion under tight straps on bales, bundles and cartons. An angle stop on the side of this jaw positions above the strap to prevent it from wedging sidewise between the blades. The upper cutting jaw operates in a rocking action to shear the strap. The tool measures 9 1/2 in. in length and weighs one pound.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9225 if you write the maker

CHAMPION
Precision Expanding Mandrel

Entirely new in principle, this positive drive, quick change work mandrel cuts handling time . . . guarantees concentricity . . . eliminates arbor pressing and collecting.

Lower cost production is assured with faster work, fewer rejects, less tool cost. Arbor is built for heavy loads. Sleeve closes at .003" under and opens to .007" over nominal size. Positive stop prevents overstrain. Holds tolerances of less than .0002" run out.

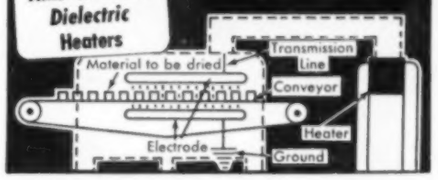
Standard sizes from 1/2" through 3" diameter, graduated by 1/16", fit your machine. Special sizes if required. More details on request.

Write Dept. IEN

The WESTERN Tool & Mfg. Co., Springfield, Ohio

BREVITY—Identify by IEN - 9226 if you write the maker

For Speed and Uniformity in Process Drying



ALLIS-CHALMERS dielectric heaters present interesting possibilities to manufacturers needing high speed, or uniform drying in their processes.

The standard ovens originally developed for core drying and twist setting can actually be used for drying many other products.

Allis-Chalmers dielectric heaters fit into production techniques. Continuous conveyors carry material between the electrodes for drying. Because drying time is a matter of minutes, and the oven is short, space requirements are considerably less than conventional conveyor type ovens, or batch ovens plus racks.

Get engineering and cost studies from your nearby Allis-Chalmers Office, or write Allis-Chalmers, Milwaukee 1, Wis.

A-3358

ALLIS-CHALMERS

BREVITY—Identify by IEN - 9227 if you write the maker

GET RID OF WIRES

and get foolproof connections in

RADIOS

AMPLIFIERS

SWITCHBOARDS

METERS

Print your circuits with Du Pont Conductive Coatings—reduce costs and time

Highly conductive coatings of low resistance are easily obtained by spray, brush, dip or stencil to metals and non-conductors. These coatings can be used to make economical, lightweight, compact high-voltage capacitors; static shields to replace usual cans and foils; resistors and solder seals. For more information, send for Bulletin CP 2-1248. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Del.

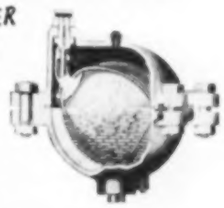
DU PONT ELECTROCHEMICALS

DU PONT

BREVITY—Identify by IEN - 9228 if you write the maker

GET RID OF AIR ACCUMULATIONS IN PIPE LINES...

A BIG TROUBLE SAVER THAT COSTS YOU LITTLE!



When air lodges at high spots in pipe lines, it reduces the effective area of the pipe, creates a friction head, lowers pumping capacity, and may result in serious water hammer!

Simplex Air Release Valves bring you a sure, efficient cure for these difficulties . . . venting air *automatically* before it can cause damage. And you pay for a standard valve—

The Simplex Air Valve is easily installed . . . positive in action . . . ample in capacity. Standard valves for pressures up to 250 p.s.i. . . . special valves for pressures up to 800 p.s.i. Thousands have been in successful use for over 50 years.

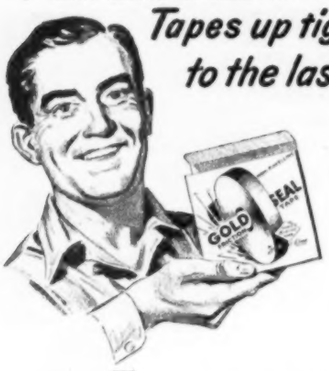
Write for free bulletin to Simplex Valve & Meter Co., Dept. 9, 6717 Upland Street, Philadelphia 42, Pa.

IT'S SIMPLEX IT'S ACCURATE

SIMPLEX
VALVE AND METER COMPANY

BREVITY—Identify by IEN - 9229 if you write the maker

Tapes up tight to the last inch



There's no waste with Gold Seal Tape. Production is laboratory-controlled to assure *lasting* "tack" in the adhesive compound. It tears evenly, won't dry out, peel, or ravel. Every roll is cellophane-wrapped to keep it *factory-fresh* until ready for use. So get Gold Seal. Get the handy 10-roll container—it's your smartest buy for shop supply. Jenkins Bros. (Rubber Div.), 100 Park Ave., New York 17.

JENKINS Gold Seal Tape FRICTION RUBBER

MADE BY JENKINS BROS MAKERS OF FAMOUS JENKINS VALVES

BREVITY—Identify by IEN - 9230 if you write the maker

Users of Wire Rope and Chain Fittings!

THIS FREE BOOK

Will Save You Time, Money

Find the right fittings . . . *right away*. Do away with needless, costly "specials" — choose from Laughlin's wide array of standard items.

This comprehensive, 44-page Laughlin No. 150 Catalog-Data Book gives you the answers to such pertinent questions as: What size eye bolt will lift a 15-ton load? How many Safety Clips should be used on 1" rope? What size shackle is as strong as 3/8" proof coil chain? What is the safe working load rating of a number 30 hook? Contains complete data on wire rope and chain fittings.

Write for your free copy of this informative, illustrated booklet today. THE THOMAS LAUGHLIN COMPANY, 19 Fore Street, Portland 6, Maine.

LAUGHLIN

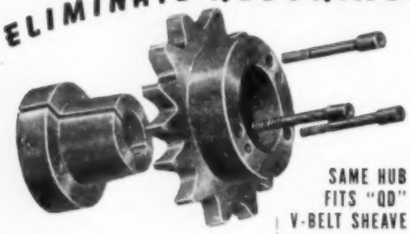
THE MOST COMPLETE LINE OF DROP-FORGED WIRE ROPE AND CHAIN FITTINGS

BREVITY—Identify by IEN - 9231 if you write the maker

FORT WORTH QD *Roller Chain* SPROCKETS WITH TAPERED SPLIT HUB

PATENT APPLIED FOR

ELIMINATE REBORING!



SAME HUB FITS "QD" V-BELT SHEAVE

Speed changes are simplified and "spare" sprockets can be carried more easily.

If your favorite distributor doesn't stock this new item, tell him about it. He'll reward you with better service.

"OFF THE SHELF" SERVICE AVAILABLE FROM INDUSTRIAL DISTRIBUTORS

Reboring of stock bore sprockets to fit various shafts is eliminated due to the various bores available in the QD hub. Installation and removal from the shaft is made easy by the tapered fit of the hub and sprocket. Hub assembly grips the shaft equivalent to a "press fit."

Catalog explaining additional advantages and construction details will be furnished on request.

OTHER FORT WORTH PRODUCTS
V-BELT DRIVES
SCREW CONVEYORS and ACCESSORIES
SCREW ELEVATORS
INDUSTRIAL FANS

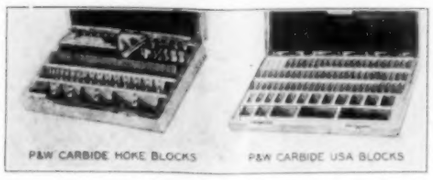
FORT WORTH STEEL AND MACHINERY CO.

3600 McCART, DEPT. 29, FORT WORTH, TEXAS

BREVITY—Identify by IEN - 9232 if you write the maker

GAGE . . Precision carbide blocks, sizes from 0.050 to 4.000 inches

Source: PRATT & WHITNEY
49 Charter Oak Blvd., West Hartford 1, Conn.



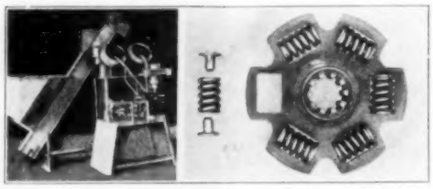
Long wear life without loss of extreme accuracy characterizes these new carbide gage blocks which are available in both USA and Hoke assemblies. They are sold in the sets, individually to replace worn steel blocks, and as wear blocks in sizes from 0.050 to 0.100 inch. Each block is made from a grade carbide that will provide excellent surface finish, resistance to wear and a high degree of stability.

Measuring surfaces are lapped as 68 deg. F. Wringing qualities are excellent. The blocks are not subject to corrosion. Blocks measuring 1 in. and smaller are accurate to a tolerance of plus 0.000004 in. and minus 0.000002 inch. Sizes over 1 in. are accurate to the same tolerance per inch of length.

BREVITY—Identify by IEN - 9233 if you write the maker

ASSEMBLING . . Automatic machine places springs and rivets in a plate

Source: KLAAS MACHINE & MFG. CO.
4328 E. 49th St., Cleveland 25, Ohio



Small springs are fed from one of two motor-driven hoppers in this new automatic machine. Rivets are fed in pairs from a second hopper. The machine places the rivets in the two ends of each spring and then positions the spring in its cavity in a clutch plate by application of hydraulic pressure. An air-operated indexing fixture advances the plate each time a cavity is filled to present the next cavity in correct position. The machine will fill 300 clutch plates per hour.

BREVITY—Identify by IEN - 9234 if you write the maker

RESEARCH . . Book tells what is being done in engineering research by colleges and universities

Engineering College Research Council
77 Massachusetts Ave., Rm. 7-204, Cambridge 39, Mass.

Summary of some 5,200 engineering research projects is published in 1951 edition of "Review of Current Research". The book presents policies, activities, personnel in the 91 member colleges and universities. A subject index contains 4,000 listings. List price of the 250-page book is $2.25.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9235 if you write the maker

$2100 PER YEAR SAVED WITH ONE PARKER SWEEPER

Here's the time study record from Plant X.

"Comparative studies, on 71,256 sq. ft. of storage and shipping space yield clean-up times of eight hours as against sixteen hours by the former method. In areas formerly swept entirely by the pushbroom method the Parker Sweeper yields still greater savings, some as high as 76%. An estimated $2100 per year after taxes will be saved."

Parker Sweepers save money, save manpower in any size plant, on any type of floor or sweepings. Test a Parker in your own plant. *Write for full details.*

PARKER INDUSTRIAL FLOOR SWEEPERS

PARKER SWEEPER CO., 32 Bechtle Ave., Springfield, O.

BREVITY—Identify by IEN - 9236 if you write the maker

SAFETYMIX

EXTRA SHOWER SAFETY . . . at no extra cost

PROTECTS AGAINST SUDDEN SCALDS

. . . Safetymix, world's leading pressure-actuated non-scald shower valve gives safety in the shower. Safetymix automatically shuts down flow if either hot or cold water fails.

HOLDS SHOWER TEMPERATURE CONSTANT

. . . Even with excessive pressure fluctuations up to 85%, Safetymix still maintains constant discharge temperature.

LIFETIME SHOWER VALVE

. . . The most rugged shower control valve made. Only Safetymix has the patented Flow Control Spindle with but *one* moving part to control *all* valve functions. Built to last a lifetime.

GET FREEDOM FROM COSTLY MAINTENANCE

. . . Safetymix is designed with self-cleaning action to prevent clogging and save water. All parts accessible from the front. As easy to fix as a faucet.

100,000 Installations Can't Be Wrong. Used by U. S. Army, Navy, Merchant Marine, colleges, industrial plants, hotels, clubs, hospitals, apartments and homes.

Send for bulletin and prices.

SAFETYMIX — MADE BY THE MAKERS OF THE NEW SYMMONS TEMPERING-CONTROLLER

Symmons ENGINEERING COMPANY
791 TREMONT ST., BOSTON 18, MASS.

BREVITY—Identify by IEN - 9237 if you write the maker

Speed Reducer Selection *Made Easy!*

When speed reduction requirements are within the fractional through 85 hp range, there is no selection problem for the design, consulting or plant engineer.

He *knows* that Winsmith can meet his specifications *precisely* with the world's most complete line within this category. And even more important, he *knows* that recommendations from Winsmith's engineering representatives can always be counted on to be practical and unbiased. That's only natural with so large a variety of standard units to choose from.

As one-of-a-kind replacements in the plant, or in quantities to serve as components on new machines, standard Winsmith Speed Reducers are a certain solution where ratings must be within the range of: 1/10 to 85 hp, 1.1: 1 to 50,000 : 1 ratio and 32 to 113,000 in. lbs. max. output torque.

50th ANNIVERSARY

Fully descriptive literature, which includes suggestions for simplifying and expediting selection, will be mailed at your request.

WINSMITH SPEED REDUCERS

MEMBER OF AGMA

WINSMITH, Inc.
10 Davis St. • Springville (Erie County) N. Y.

BREVITY—Identify by IEN - 9239 if you write the maker

EASTON

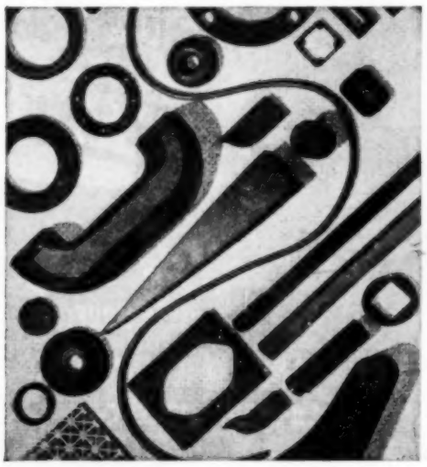
a dependable design and construction service in industrial cars

A-1020

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.

NEW YORK • PHILADELPHIA • PITTSBURGH

BREVITY—Identify by IEN - 9240 if you write the maker



HOW INDUSTRY IS USING RUBATEX CLOSED CELL RUBBER

Product engineers in industries have found RUBATEX Closed Cell Rubber the ideal material for uses such as these:

- Gaskets
- Automobile arm rests
- Anti-squeak pads
- Dust barriers
- Low temperature insulation
- Packing cushion for fragile goods
- Flotation devices
- Athletic shock padding
- Gymnasium mats
- Kneeling pads
- Crash pads
- Fatigue mats
- Expansion joint filler
- Arctic equipment
- Shoe innersoles
- Typewriter cushions
- Rug underpad
- Seat cushions
- Bath and kitchen mats
- Crib and play-pen mats
- Weather stripping
- Vibration damping

RUBATEX is light in weight, buoyant, and has good compressive strength. It cannot absorb moisture even at cut edges. RUBATEX is rot and vermin proof and sanitary. There is a big economy factor to RUBATEX. Most gasket requirements can be cut from sheet stock without need for the expense of a molded-on skin. RUBATEX is available in natural and synthetic stocks and in soft, medium and firm forms. For more information, write for Catalog, RBS-12-49, Great American Industries, Inc., RUBATEX DIVISION, BEDFORD, VIRGINIA.

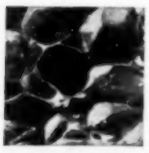


Photo-micrograph of RUBATEX closed cellular rubber shows the tiny individually sealed balloon-like chambers which retain inert nitrogen under pressure.

RUBATEX

CLOSED CELL RUBBER

ZERO MOISTURE ABSORPTION

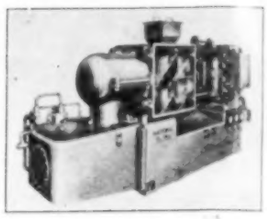
RESILIENT AT LOW TEMPERATURES

EXCELLENT SHOCK ABSORPTION

BREVITY—Identify by IEN - 9242 if you write the maker

PLASTIC MOLDING . . Injection machine, 8 to 32 oz. of thermoplastic material

Source: NATIONAL ELECTRIC WELDING MACHINES CO.
1848-1914 N. Trumbull St., Bay City, Mich.



Preplasticizing action by means of a multi-stage variable-pitch electrically-heated screw features this new injection molding machine for polystyrene or acrylic plastics, compound vinyls and acetates. The machine is available in four sizes rating 12 to 48 cu. in. per shot or on the average 8 to 32 oz. of thermo-plastic material. It will operate at about three shots per min. for a total of 90 to 360 lb. per hour. It can be employed to produce colored work by tumbling the material and suitable dry coloring matter prior to filling the hopper.

The heated screw is motor driven and feeds from beneath the hopper at the rear of the machine to the back of the stationary platen. Rotation of the screw and forward movement of the variable-pitch veins serve to mull the material for delivery into the injection chamber at a constant viscosity. It is shot into the mold by a hydraulically-operated injection ram after the mold has been clamped by the direct operating of the hydraulic holding cylinder at the left of the assembly. No toggle joints or levers are employed with this cylinder, which provides a locking pressure of 150 ton on the smallest machine and 500 ton on the largest one.

Stroke of the clamping piston is 12 to 18 in. on the four machines. Platen dimensions are 23 by 23 in. to 40 by 40 inches. Motor-driven hydraulic equipment supplies pressure at 2,000 lb. is assembled as a part of the machine. Floor dimensions range from 9½ by 6 ft. to 16 by 8 feet. Height is 5½ to 7 feet.

BREVITY—Identify by IEN - 9243 if you write the maker

GAGE . . Dial indicator design checks diameter of internal grooves

Source: NILSSON GAGE CO.
4A Lake St., Poughkeepsie, N. Y.

One piece body and new vernier adjustment feature construction of the company's redesigned dial-type groove gage, previously described IEN-6293-50. The gage reads "over" and "under" a predetermined dimension as set by checking with a micrometer or gage blocks or a master ring. It is designed to check diameters of internal grooves and recesses, such as those for locking rings, o-rings, oil grooves, washer grooves.

The lower gaging finger is retracted so the two fingers can be entered through a bore when the gage trigger is depressed. Releasing the trigger transfers the measurement to the dial indicator so a reading can be taken. Two sizes in the line take various extensions to cover an overall diameter range from .524 to 5.260 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

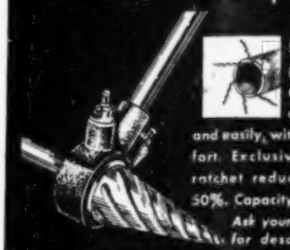
BREVITY—Identify by IEN - 9244 if you write the maker

REED

TRADEMARK

SELF FEEDING RATCHET REAMER

Saves Time, Money and Effort



Spiral flutes with patented cutting edges cut burr cleanly, quickly and easily, with no pushing effort. Exclusive double-pawl ratchet reduces lost motion 50%. Capacity ⅛ to 2"

Ask your Jobber or Write for descriptive circular

In a vise or pipe tool . . . if it's a REED, it's RIGHT

PIPE VISES AND STANDS · MACHINISTS VISES · THREADERS CUTTERS

REED MANUFACTURING COMPANY
ERIE, PENNSYLVANIA, U. S. A.

BREVITY—Identify by IEN - 9245 if you write the maker

Low cost room comfort ...with

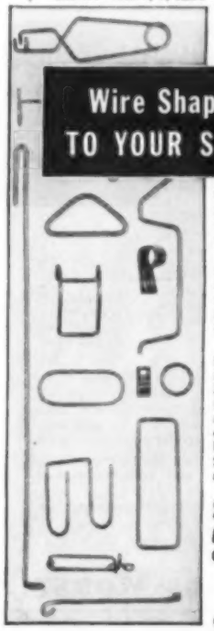
Sylphon Automatic Radiator Valve No. 885, for exposed radiators. (No. 895, not shown, for enclosed radiators.)

SYLPHON Automatic Radiator Valves

● Here's the money-saving answer to the problem of too much or too little heat. Sylphon Automatic Radiator Valves assure positive, uniform temperature control in one room, an office or entire plant. Easily installed on your present radiators. Simply constructed, self-powered, self-contained, fully modulating. Pay for themselves many times over in fuel savings. Write for Bulletin RN-80.

FULTON SYLPHON
DIVISION
ROBERTSHAW-FULTON CONTROLS CO. • • KNOXVILLE 4, TENN.
Temperature Controls • Bellows Devices • Bellows Assemblies
Canadian Representatives, Darling Brothers, Montreal

BREVITY—Identify by IEN - 9246 if you write the maker



Wire Shapes and Forms TO YOUR SPECIFICATIONS

● Your wire forms are produced fast, accurately and at low cost with Sommer mass-production methods.

Speedy, automatic plating equipment handles either large or small assemblies. Popular new Zinc Iridite process adds a bright, durable, economical finish.

Sommer offers complete forming, stamping, cut-threading and butt-welding services. Let us work with you in designing and producing any wire shapes or forms needed for your defense contracts. Send sample, blueprint or drawing—see how Sommer can save you time and money.

SOMMER METALCRAFT CORPORATION
(Formerly JESCHKE Wire and Specialty Company)
300 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

BREVITY—Identify by IEN - 9247 if you write the maker

"IPS" CAST IRON PIPE for DOWNSPOUTS, WASTE and VENT LINES

Plain or Threaded Ends

Integral Calking Hubs

"IPS" MEANS Iron Pipe Size, having the same outside diameter as steel or G.W.I. pipe.

Now specified by leading architects and engineers for new and replacement piping.

Can be cut and threaded with ordinary tools of the piping trade.

Either plain or threaded ends: 18 foot lengths, sizes 3, 4, 5, 6, 8, and 10 inches. . . .

Or integral calking hub, other end plain: 18 foot lengths, sizes 4, 6 and 8 inches.

Write for Form 4-26-50.

JAMES B. CLOW & SONS
201-299 North Talman Avenue · Chicago 80, Illinois

WHOLESALE DISTRIBUTORS OF PIPE, VALVES AND FITTINGS FOR INDUSTRIAL USE

BREVITY—Identify by IEN - 9248 if you write the maker

Power positioning of material increases production in sheet feeding operation.

perhaps
YOUR PRODUCTION CAN BE INCREASED THROUGH POWER POSITIONING OF TOOLS AND MATERIALS

PORTELVATOR®
has supplied the answer to others.

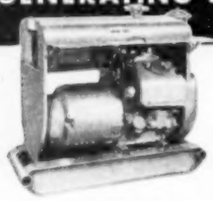
Start a beneficent chain reaction now; write for
BULLETIN P-507

Twenty-five ton capacity, self loading, self discharging die transfer table.

THE Hamilton TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

BREVITY—Identify by IEN - 9249 if you write the maker

POWER FOR TOOLS
...LIGHTS FOR SAFETY!
FAIRBANKS-MORSE
GENERATING SETS



Available in capacities from 600 to 35,000 watts.

Construction and repair crews working away from high power lines will find a dependable source of electric power in a Fairbanks-Morse Generating Set.

These generators are widely used by railroads, lumber camps, oil field operators, government services, public works contractors and many others, because of their ability to take hard knocks and still deliver power.

Send for booklet describing the complete line of Fairbanks-Morse Generators. Write Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE,
a name worth remembering

BREVITY—Identify by IEN - 9250 if you write the maker

1001 GAUGES to choose from

The combinations of styles, types, mountings, ranges and functions of Marsh Gauges are almost endless, but they all have one trait in common: Each is best for the service for which it is recommended. Write today for the new Marsh Catalog covering the broad Marsh line. Let us prove that Marsh is the gauge for your product, whether you need a few or thousands.

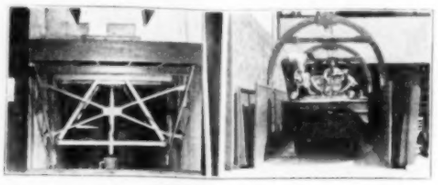
Marsh Instrument Co.
Sales affiliate of
Jas. P. Marsh Corp.
Dept. A, Skokie, Ill.

MARSH

BREVITY—Identify by IEN - 9251 if you write the maker

ELEVATOR . . Hydraulic assembly rates 10 ton, has 13 ft. lift action

Source: GLOBE HOIST CO.
Queen St. & Mermaid Lane, Philadelphia 18, Pa.



New application of the company's hydraulic elevator is shown in the illustration in connection with storing and handling an amphibious fire truck for a fire station in Cincinnati. Because the truck is used at infrequent intervals it was desired to store it underground rather than at street level. Accordingly it rides the elevator platform 13 ft. below the street when it is not in use. In this position it is covered by two hinged steel doors.

Curved members secured to the platform open and move the doors to the two sides so the truck can be moved out as soon as the platform reaches street level. The assembly includes a 15¾-in. hydraulic cylinder served by a motor-driven pump with pushbutton control.

BREVITY—Identify by IEN - 9252 if you write the maker

LIGHTING . . Photoelectric control to open and close a lighting circuit

Source: WESTON ELECTRICAL INSTRUMENT CORP.
641 Frelinghuysen Ave., Newark 5, N. J.

Model 1089 is a new weather-proof plug-in type photoelectric control for automatic "on-off" regulation of artificial lighting at predetermined light levels. The unit is particularly suited for use in street lighting, sign lighting and control of lighting circuits in industrial plants and their surrounding yards.

Assembly is in a standard weather-proof watt-hour glass meter housing and consists of a dry disc-type photocell, a sensitive relay to be operated by the photocell, a clock motor, a mercury switch and a limit switch. The unit plugs into a standard watt-hour meter receptacle assembled in the lighting circuit. It will function correctly in a range from minus 30 and plus 140 deg. F. List price is $100.

BREVITY—Identify by IEN - 9253 if you write the maker

RECORD KEEPING . . New soundslide film describes company's method of summarizing information

Remington Rand Inc.
315 Fourth Ave., Room 1618, New York 10, N. Y.

"Record Sort" titles new soundslide film that describes the company's procedure for sorting detail statistical information into fairly simple records and reports at 25,000 per hour. The new film has a running time of 25 min., is available on loan or a demonstration will be arranged upon request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9254 if you write the maker

BREVITY—Identify by IEN - 9255 if you write the maker

In plants which actually manufacture the acids and alkalies you use, Prufcoat has been providing positive protection against costly corrosion for over 10 years now . . . on *concrete floors, walls, ceilings, structural steel, tanks and other equipment.* Write for Prufcoat literature.

Where Acids or Alkalies Destroy Prufcoat PROTECTS

NOW!
A WHITE ENAMEL THAT STAYS WHITE

Write today for folder on Prufcoat BX White Enamel—the acid and alkali resistant white coating that stays white, inside or outside. Can be applied to moist surfaces.

Prufcoat Laboratories, Inc.
50 East 42nd Street
New York 17, N.Y.

Preventive Maintenance PAYS!

BREVITY—Identify by IEN - 9256 if you write the maker

IT'S DIFFICULT— to do a good job hanging on to a rickety ladder

It's Easy with a MODEL PUL
HI-REACH PLATFORM TELESCOPER

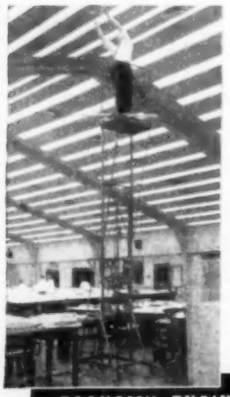
Positive safety relieves the workman of all uneasiness and inclination to hurry the job. Both hands free to work in comfort with undivided attention.

When platform is elevated to convenient working position, maintenance man can go up or down built-in steps and rungs without lowering Telescoper platform. When telescoped down to its minimum height of 6'8", its 32" width the Hi-Reach can be rolled through doorways or narrow shop aisles.

THREE STANDARD MODELS:

No. 1—Platform lift 10'9"....$295.00
No. 2—Platform lift 11'9".... 305.00
No. 3—Platform lift 15'0".... 330.00

Rubber-tired wheels—$5.00 extra
F.O.B. Chicago

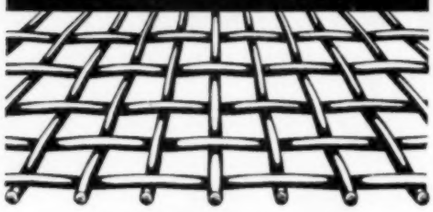


Other Hi-Reach Platform Telescopers available with platform lifts up to 60' or more. Write for complete detailed specifications. Address inquiries to E. W. McDonnell for personal service.

ECONOMY ENGINEERING COMPANY
4502 WEST LAKE STREET, CHICAGO 24, ILLINOIS

BREVITY—Identify by IEN - 9258 if you write the maker

CAL-WIC WIRE CLOTH



meets all STANDARD and SPECIAL requirements

Either as original equipment or for specialized uses in filtering, screening, grading, cleaning or processing, Cal-Wic Wire Cloth is available in the right weave, mesh and weight to give you long-wearing, dependable service.

Made in different types of metals and alloys for high resistance to chemical action, corrosion, abrasion and temperature extremes.

For additional information write or phone our nearest sales office.

THE COLORADO FUEL & IRON CORPORATION – Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION – Oakland, California
WICKWIRE SPENCER STEEL DIVISION – Clinton, Massachusetts

CAL-WIC
INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

BREVITY—Identify by IEN - 9259 if you write the maker

cut servicing costs

The NEW RITE TOOL

The New Rite Tool trues commutators quickly and accurately in your own shop or on the service call.
NOT DEPENDENT on mechanical power.
UNEXCELLED for the fast reconditioning of small armatures of electrical devices and appliances from razors to vacuum cleaners.
UNSURPASSED for the economical turning and undercutting of AUTOMOTIVE GENERATORS and STARTERS.
Will accommodate shafts from .156 to .787 thousandths in diameter. by use of collets.

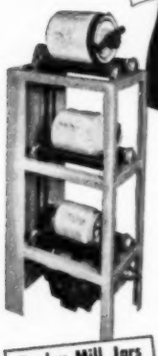
MODEL B RITE TOOL
$41.25 F.O.B. Fall River
Three collets included
Model with undercutter $2.50 extra

Manufactured by
RITE TOOL CO., INC.
FALL RIVER, MASSACHUSETTS, U. S. A.

For details write . . .

BREVITY—Identify by IEN - 9260 if you write the maker

Here's the *Best* in JAR MILLS



The "roller-type" JAR MILL with the patented "non-creep" rolls.

You don't have to continually watch a "U. S." *roller-type* jar mill — the jar stays put without clamping. Special patented rollers prevent jar creep; the jar stays centered.

"U. S." roller-type Jar Mills with the patented non-creep rolls are made in sizes to handle 1 to 24 jars. Adjustable to roll any round container from a pint to 6 gallon capacity.

Realex Mill Jars

Positive Locking Wide Mouth Chemical Porcelain or stoneware. Quart to 6 gallon capacity.

WRITE FOR CATALOG

U. S. STONEWARE
Akron 9, Ohio

BREVITY—Identify by IEN - 9261 if you write the maker

PUMP . . Motor driven centrifugal, 1/3 hp. motor, 52 gpm. at 5 ft. head

Source: SAMUEL S. GELBER CO.
160-64 N. Clinton St., Chicago 6, Ill.

No. 888 is a new aluminum-housing centrifugal pump equipped with a perforated-brass inlet screen to operate immersed in a tank containing fluids such as coolants employed on machine tools. The impeller delivers through a 1¼-in. pipe connection in the housing. It is particularly suited for fluids containing abrasive solids.

The assembly requires no seal and the motor is direct connected to the impeller so there is no coupling. The motor operates on 110-volt 60-cycle ac. at 1,750 rpm. It is equipped with an 8-ft. cord and plug for connection to the power circuit and with a bracket so the pump can be mounted on a tank cover or directly on a machine.

BREVITY—Identify by IEN - 9262 if you write the maker

FLOORS . . Synthetic rubber to patch concrete, mastic, metal, wood

Source: FLASH-STONE CO.
36 E. Rittenhouse St., Philadelphia 44, Pa.

Packaged unit lists at $10

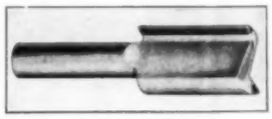
Vulcrete trade names a new synthetic-rubber flooring material that is shipped in 35-lb. unit packages with a gallon can of liquid solvent, sufficient to make a correct mix of all of the material for general application. The bagged material and the can are enclosed in a shipping carton. An instruction label is secured to the can.

Application is by means of a trowel, float, knife. The material dries to a light concrete color. It bonds permanently with the base surface. In addition to use on floors, it can be employed to make durable sanitary table and work-bench tops and is suited for general patching, water proofing, pointing.

BREVITY—Identify by IEN - 9263 if you write the maker

WOOD WORKING . . Router bit for wood, plastics, is carbide tipped

Source: NEW ENGLAND CARBIDE TOOL CO.
58-62 Brookline St., Cambridge 39, Mass.



Three sizes with ¼, ⅜ and ½-in. cutting diameters and ¼-in. shank are available in this new Cyclo-Router carbide-tipped bit. The carbide edges stand up excellently in cutting wood and particularly in cutting glued laminated sections of wood and plastic. All three sizes named as well as larger units are available to specification with standard ½ in. shanks for use in production routing machines.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9264 if you write the maker

HINGED PLATEGRIP

BELT FASTENER No. 500

For Heavy Conveyor Belts of Changing Length

These heavy-duty belt fasteners make a strong, flexible joint in conveyor belts, belts of any width and of from ⅛" to ½" thickness. They offer special advantages in mines, quarries or industrial setups where length or position of belt is frequently changed, because sections can be removed or added at will. Joints are opened for this purpose by simply pulling out the hinge pin.

Easily and quickly applied on the job or in the shop. Special design gives deep compression into belting and smooth, flush joint.

Write for Circular.

ARMSTRONG-BRAY & CO.
5380 NORTHWEST HIGHWAY CHICAGO 30

BREVITY—Identify by IEN - 9265 if you write the maker

PALMGREN ANGLE VISES

HEAVY-DUTY Model

For Quick — Accurate Set-ups

PALMGREN Heavy Duty Angle Vises are built sturdy and rugged for tough, heavy jobs. They are accurately graduated in degrees, can be quickly adjusted to any angle, stay locked under severe service and save valuable hours otherwise wasted in tedious make-ready, wedging or making temporary jigs and fixtures.

Jaws are hardened and ground. Special outstanding features are the size and opening of jaws—4" Jaws open full 4", the 6" Jaws open full 6" etc., with corresponding depth of Jaws. Vise can be used as ordinary vise when lowered to horizontal position. Swivel bases furnished if desired. Sizes 4", 6" and 8" Jaws and openings. Prompt deliveries.

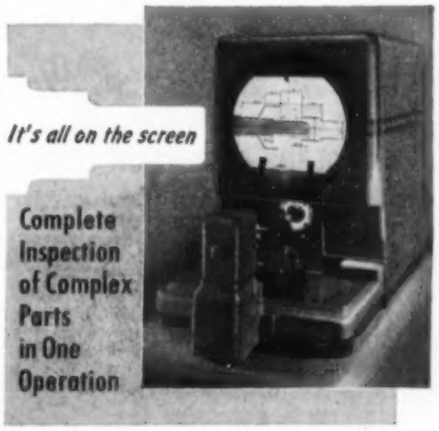
Write for bulletin on complete line of PALMGREN Vises

CHICAGO TOOL & ENGINEERING CO.
Mfrs. of PALMGREN PRODUCTS for over 25 years
8406 SOUTH CHICAGO AVENUE • • • CHICAGO

ORDER TODAY
Be sure of IMMEDIATE DELIVERIES

PRECISION WORK AT ANY ANGLE

BREVITY—Identify by IEN - 9266 if you write the maker



Before investing in specialized gaging equipment that checks only a single item—perhaps even a single dimension of a single item—it's wise to investigate the Kodak Contour Projector. Very often you'll find that for a much smaller outlay it gives you faster, more accurate inspection, not on just one part now, but on a great many precision parts you may come up against later.

On a uniformly bright 14-inch screen requiring no hoods or curtains, the operator merely compares a magnified image with an overlaid tolerance outline which serves as a gage. One such "chart-gage" and work-holding fixture are all you need for complete inspection of a part, large or small, simple or complex. To switch to a different job, just insert a different chart and fixture. Little or nothing wears out. Little experience is required.

The Model 3 projector body, work stage, and lamp house come apart to accommodate big parts. Accessories provide vertical projection and examination of features that can't be silhouetted, even deep recesses.

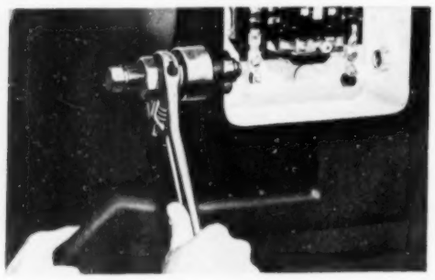
For full information or a demonstration, write to Eastman Kodak Company, Industrial Optical Sales Division, Rochester 4, N. Y.

the KODAK CONTOUR PROJECTOR,
MODEL 3

$1290. List price, F.O.B. Rochester, N.Y., from ENGINEERS SPECIALTIES, Buffalo 9, N.Y.; magnification lenses and accessories extra. Price subject to change without notice.

Kodak
TRADE-MARK

BREVITY—Identify by IEN - 9268 if you write the maker



Accurate "clean" openings for conduit easily made in 1½ minutes or less

Speed conduit installations with GREENLEE Knockout Punches and Cutters. Eliminate time-wasting drilling and filing to enlarge holes. Do the job in 1½ minutes or less with these GREENLEE tools that cut smooth holes up to 4" to accommodate conduit in sizes ranging from ½ to 3½". Do the job neater, faster, easier, this way.

GREENLEE

GET FACTS TODAY on all four types of Greenlee Knockout Punches and Cutters and HydraRam Hydraulic Knockout Punch Driver. Greenlee Tool Co., 1869 Herbert Ave., Rockford, Illinois.

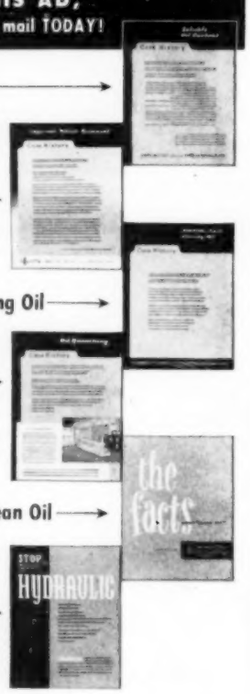
BREVITY—Identify by IEN - 9269 if you write the maker

Ford Motor Co. saves 96.5% on COOLANT FILTRATION COSTS with HONAN-CRANE Equipment

GET THE DETAILS!

These case histories and "Clean Oil Bulletins" describe how industrial plants, large and small, save thousands of dollars annually with Honan-Crane Oil Purification and Handling Equipment.

TEAR OUT THIS AD, check the boxes and mail TODAY!



☐ **Soluble Oil Coolant** → Case Histories: Ford Motor Company and Milwaukee Gas Specialty Co.

☐ **Chip and Waste Removal** → Case Histories: Manufacturer of Fine Automobiles and Minneapolis Electric Castings Company. (Houdaille Conveyor Systems.)

☐ **Machine Tool Cutting Oil** → Case History: Wagner Electric Corp., St. Louis.

☐ **Oil Quenching** → Case Histories: Cleveland Graphite Bronze Co., Ft. Wayne Works of International Harvester and Salisbury Axle Division of Dana Corporation.

☐ **The Facts About Clean Oil** → 14-Page booklet describes highly profitable advantages of oil purification in wide variety of industries. Gives brief case histories.

☐ **Hydraulic Bulletin** → 8-Page booklet tells how Honan-Crane Equipment reduces downtime and costly repairs on hydraulic presses, machine tools, plastic molding machines, etc.

NAME
TITLE
COMPANY
ADDRESS
CITY STATE

CLEAN OIL ENGINEERING

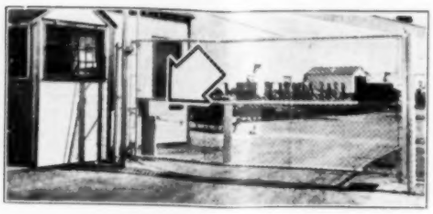
Honan-Crane Corp.
802 WABASH AVENUE
LEBANON, INDIANA

A Subsidiary of **Houdaille-Hershey Corp.**

BREVITY—Identify by IEN - 9271 if you write the maker

DOOR OPERATOR . . Motor drive, weather proof assembly for plant gate

Source: ELECTRIC POWER DOOR CO. 2125-29 E. Lake St., Minneapolis 7, Minn.



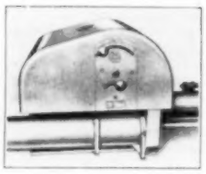
New assembly of the company's motor-driven belt-connected worm-and-gear operator is available in a weather-proof housing for outdoor installation on plant gates and control at a centralized location. The operator can be supplied with controls including radio, key-post switch, electric eye, pull cord and ground trip as required. It is equipped with steel mounting channels and a weather-proof steel cover.

Assembly includes a safety clutch, thermal over-load release and adjustable switch. Motor characteristics are subject to specification. Exposed parts are corrosion proofed. The drive can be disconnected for hand operation of the gate in the event of power failure rendering the motor inoperative.

BREVITY—Identify by IEN - 9272 if you write the maker

HEATING . . Air-fuel control for company's screw feed boiler stoker

Source: IRON FIREMAN MFG. CO. 3168-72 W. 106th St., Cleveland 11, Ohio



Accurate metering of coal from a bunker to a boiler by means of the worm conveyor in the company's power-driven stoker is synchronized with metering combustion air from the fan to the boiler by a new control attachment known as the Air Volumeter. Adjustment can be made for any speed between maximum and minimum in stepless progression.

Operating rate of the stoker is determined by position of the upper quadrant on the control panel at the side of the housing. This control point can be connected directly to the power operator of a modulating combustion control or can be set by hand. When changes are required in the air-fuel ratio the operator manually adjusts the "air ratio" quadrant.

BREVITY—Identify by IEN - 9273 if you write the maker

STEEL . . Picture tour of company's plant in booklet that illustrates steps in making steel

Atlantic Steel Co.
P. O. Box 1714-A, Atlanta 1, Ga.

Starting with open-hearth furnaces, new booklet shows steps in making steel bar and wire, nails, wire fence, forgings and stampings. Its 28 pages also describe personnel, plant facilities, together with a list of products made and warehoused. Ask for the picture booklet, "Dixisteel in the Making".

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9274 if you write the maker

KRITZER Commercial "FIN PIPE" COILS

- For truly modern heating at lowest cost
- No guesswork about selection
- Installation is simple as ABC
- Sizes, cover styles for every need

Get the Facts! — Kritzer offers the most complete and authoritative data on finned-pipe heating in the industry. Write for Engineering Manual 50-CE.

KRITZER RADIANT COILS, INC.
2901 W. Lawrence Ave., Chicago 25, Ill.

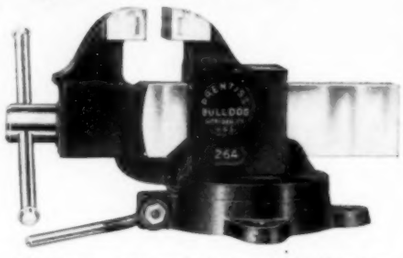
If it's Kritzer, it's right, Sir!!

BREVITY—Identify by IEN - 9275 if you write the maker

PRENTISS

"BULL DOG" VISES

Backed by 80 years of time-proven acceptance by industry.



MACHINISTS — TOP SWIVEL JAW — COMBINATION PIPE HINGE PIPE — WOODWORKERS' — UTILITY

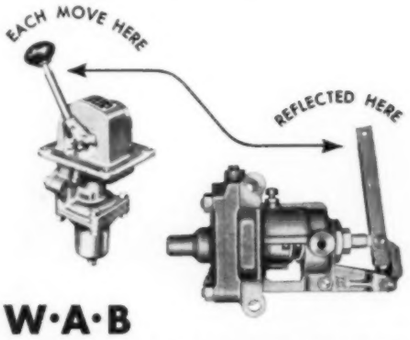
Renewable steel jaws that cannot work loose, swivel base with a positive lock plus other features give you vises that will stand the most severe tests. Send for THE NEW PRENTISS CATALOGUE TODAY.

PRENTISS VISE DIVISION
OF THE CHARLES PARKER CO., MERIDEN, CONN., U. S. A.

BREVITY—Identify by IEN - 9276 if you write the maker

Got Any Problems That Call For THROTTLING / GRADUATING / POSITIONING CONTROLS?

Here's your Answer...



W·A·B VALVES and ACTUATORS

The smallest move of the control-valve handle is "echoed" by proportional movement of the actuator to throttle engines, graduate flow in process operations, positioning actuator to modulate fuel feed to boilers, etc. Eliminates complication and maintenance of mechanical linkage. Only connection is an air tube. Place controls at any distance from operation, centralize command of multiple operations. Hand, foot and cam operated valves available. Ask for Bulletin IDA 9481-1.

WESTINGHOUSE
AIR BRAKE COMPANY
WILMERDING, PENNA.
INDUSTRIAL PRODUCTS DIVISION

Factory Branch: Emeryville, Calif.
Distributors throughout the United States
Consult your Classified Directory
Distributed in Canada by:
Canadian Westinghouse Co., Ltd., Hamilton, Ontario

BREVITY—Identify by IEN - 9278 if you write the maker

Chem-Board Tote Boxes HELP ARMAMENT PROGRAM

All kinds of materials, parts and sub-assemblies are flowing to production lines efficiently and economically in Convoy Chem-Board Tote Boxes to speed the armament program in plants from coast to coast.

Chem-Board is made of corrugated fibre-board, chemically impregnated by Convoy's exclusive process. It is flint hard and rock strong. It is not weakened by moisture. It is impervious to machine oils. Convoy Tote Boxes cost and weigh 50% to 60% less than steel.

The lightness, toughness and economy of Chem-Board Tote Boxes are unmatched. Tell us the style you use . . . we'll send a free production sample from the next run for you to test. As a guide for present and future availability, our current production capacity is reserved for the unprecedented demands from old customers and "DO" orders. Orders rated DO-MRO are acceptable. Write today.

Standard and Custom-made Nesting—Stacking—Vertical CHEM-BOARD TOTE BOXES

CONVOY, INC.
P. O. Station B, Box 216-1
CANTON 6, OHIO

BREVITY—Identify by IEN - 9279 if you write the maker

Lighter...faster Rotor grinders "PAID OFF" in 48 days

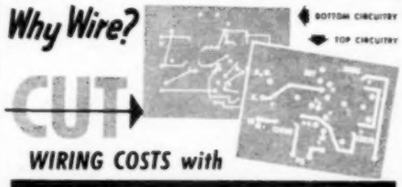
JOB: Grinding welds on truck cabs. Using slow, 20-pound electric grinders. Only 2800 r.p.m. under load.

SOLUTION: Rotor Application Engineer suggested changing to Rotor 6" Air Grinders that weigh only 9¾ pounds. Speed 5500 r.p.m. under load.

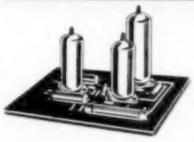
RESULTS: Stepped up metal removal and increased wheel life. Lower maintenance. Cut man-hours per cab. Savings paid off cost of Rotor Grinders in 48 days on basis of 50% use factor. Write for Catalog No. 58.

THE ROTOR TOOL CO.
CLEVELAND, OHIO

BREVITY—Identify by IEN - 9280 if you write the maker



PRINTED CIRCUITS



FOREMOST with printed circuits and assemblies:

1. Lamination of foils to high temperature plastics such as silicone fibre glass which will withstand temperatures of 200° C. for 4 hours. (DO required).
2. Metal foils laminated to flexible bases including paper, nylon and glass cloth.
3. Spot dip soldering.
4. Efficient dip soldering pin assembly method.
5. Flush printed electronic switches.

Photocircuits Corporation will supply the etched and punched circuit ready for assembly, or completely assembled as desired. We offer fast, low cost service on sample and pilot run quantities, and have ample facilities for volume production.

PC

Let our engineering facilities and experience help you solve your design and application problems.

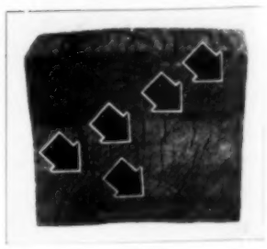
For more detailed information, write to:

PHOTOCIRCUITS Corporation
Dept. IEN9, GLEN COVE, NEW YORK

BREVITY—Identify by IEN - 9281 if you write the maker

ADHESIVE . . For wood, plastics, rubber, primed metal, paper, textiles

Source: KOPPERS CO.
2047 Koppers Bldg., Pittsburgh 19, Pa.



Resorcinol is conserved and Specification JAN-A-397 is satisfied by a new adhesive trade named Penacolite G-1260. It sets at room temperature and is suited particularly for wood assemblies as in frames for aircraft hangers, floor boards for aircraft, pontoons, rib structures of self-sealing fuel tanks, parachute assembly desks, bomb packing cases, skis, laminated tent arches. The bond is strong, durable and waterproof. A test block made of laminated oak is shown in the illustration after having undergone a 21-day vacuum-pressure test.

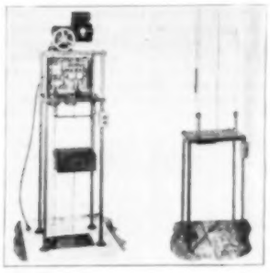
Two separate parts make up the adhesive as it is supplied. These include an alcohol-water solution of a partially condensed phenol, resorcinol, formaldehyde resin and a tan powder comprising paraformaldehyde and walnut-shell flour. Five parts of the first are normally mixed with one part of the second, quantities being held down to not more than that required for application in a 7½-hr. useful working life at 60 deg. F. or a 3-hr. life at 75 deg. F.

Technical Bulletin C-1-152-T, 7 loose-leaf sheets, presents detailed information on handling, mixing, applying.

BREVITY—Identify by IEN - 9282 if you write the maker

ELEVATOR . . Electric dumbwaiter operates box or basket carrier

Source: JAMES L. BALDWIN & CO.
1548-52 W. Thomas St., Chicago 22, Ill.



Tube mounted aluminum plates carry the motor-equipped driving head, an idler head and the electric control equipment in this new elevator. It is known as No. 28 when power is applied at the top and as No. 27 when the power unit is at the bottom. Operation is on 110-volt 60-cycle ac. to the capacitor motor with current passing through a transformer to provide 24-volt control current for the momentary-contact pushbutton switches and reversing relay in the assembly.

The carrier is connected over the upper and lower sheaves by a ¼-in. round leather belt, a rubber-treated cotton cord, or a ¼-in. tiller-type wire rope. The carrier operates between 12-gage spring-wire guides secured by tensioners at the top and bottom. Lift height is to specification. The carrier can be any dimension to 20 in. in width by 20 in. front to back and to 30 in. in height maximum.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9283 if you write the maker

SAFETY FEEDERS

- Blanks are fed from a distance of 14 inches
- Eliminates need of putting fingers under press ram

▶ **BOOST PRODUCTION 20% TO 100%**
— Reported by users

▶ **ELIMINATE DIE BREAKAGE**
— Assures Feeding Blank: One at a Time

▶ **CUT INSURANCE COSTS**
— Fewer Accidents Mean Lower Premiums.

Littell Pres-Vac Safety Feeders are made in Single and Multiple types in a variety of cup sizes and styles.

F. J. Littell MACHINE CO.
AIR DIVISION
4123 RAVENSWOOD AVE., CHICAGO 13, ILL.
— District Offices: Detroit and Cleveland —
Write for Catalog

BREVITY—Identify by IEN - 9284 if you write the maker

TEMPERED WIRE

Better products . . . better production with Roebling Oil-Tempered Spring Wire

EVERY INCH of Roebling Oil-Tempered Spring Wire is exactly like every other inch. It's a *quality* wire, mechanically and metallurgically uniform from end to end . . . saves preparation time . . . brings fewer machine stoppages . . . minimizes the number of rejects.

Roebling's is one of the nation's largest specialty wire mills. From steel-making to finished product every manufacturing step is performed in Roebling's plants. Today large quantities of this wire are required in the rearmament program, but we will always do our best to meet your delivery and service requirements. John A. Roebling's Sons Co., Trenton 2, New Jersey.

ROEBLING

BREVITY—Identify by IEN - 9285 if you write the maker

for • SPRAYING • WASHING • RINSING • COOLING • AIR CONDITIONING

Get the most out of your Spraying Equipment with minimum power . . . with efficient spraying. Use Yarway Nozzles. No internal vanes or other restrictions to clog or hinder flow.

Wide range of standard sizes and capacities. Cast or machined from solid bar stock.

Thousands in use. Write for Bulletin N-616.

YARWAY

SPRAY NOZZLES

YARNALL-WARING COMPANY
122 Mermaid Avenue, Philadelphia 18, Pa.

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Combined PNEUMATIC TOOL SUSPENSION AND AIR SUPPLY

HOSE which supplies air suspends pneumatic tool directly over the work spot, always handy. Tool is counterbalanced by spring tension of reel. Releasing tool lifts it automatically to convenient position. No cable suspension, no dangerous loops of loose hose to cause accidents. Speeds up production, lessens fatigue, reduces tool maintenance cost, saves hose.

SEE YOUR JOBBER OR WRITE

Wayne
THE WAYNE PUMP COMPANY
FORT WAYNE 4, INDIANA • TORONTO

INDUSTRIAL HOSE REELS
FOR AIR, WATER, FLUID LUBRICANTS AND COOLANTS

BREVITY—Identify by IEN - 9287 if you write the maker

KEEP TROUBLES OUT... put Stainless Steel FLOATS in

COMMON float failures can cause costly repairs and shutdowns which cut down on the efficiency of plant operations. That's why it pays to specify stainless steel floats in order to get long, trouble-free service in all but extremely specialized applications where specific materials are required.

When you use Chicago's stainless floats, you're assured of the best floats available—floats that will pay big dividends in less maintenance and more continuous service. Specify Chicago's stainless floats and keep troubles out!

WRITE FOR FREE CATALOG

CHICAGO FLOAT WORKS, INC.

2326 So. Western Ave.
Chicago 8, Illinois

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VULCAN
ELECTRIC SOLDERING TOOLS

PLUG TIP

All parts replaceable by simply removing 4 screws

50 Watts 1/4" Tip. Dia.
100 Watts 3/8" Tip. Dia.
150 Watts 3/8" Tip Dia.
150 Watts 1/2" Tip Dia.
200 Watts 5/8" Tip. Dia.
300 Watts 7/8" Tip Dia.

VULCAN ELECTRIC COMPANY
DANVERS 8, MASS.

Maker of Vulcan Electric Soldering Tools, Electric Solder Pots, Electric Branding Irons and Electric Heating Units.

BREVITY—Identify by IEN - 9289 if you write the maker

Suzy the stock girl says...

"Here's what I need to move materials faster!"

Containers weighing 1/6 that of steel, only 1/2 as much as aluminum—and at no sacrifice of strength and durability! Give your workers *this* kind of container and you're going to *lower* handling costs, *reduce* worker accidents. Diamond Vulcanized Fibre Receptacles will not crack, splinter or peel. Smooth, hard surface avoids snags in delicate fabrics, yet has "elephant-hide" toughness to carry the heavy stuff. All types available—boxes, barrels, cans, trucks, etc. Put a few in your plant, now, and discover what they can do. Send for descriptive booklet.

C-D DIAMOND FIBRE RECEPTACLES
CONTINENTAL-DIAMOND FIBRE CO., NEWARK 21, DEL.

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Identification, size of the material, information it contains so you can judge its value to you.

AIR CONDITIONING . . For industrial use; non-technical review, features. Bulletin B-5160, 20 pages. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Pittsburgh 30, Pa. **IEN-01049**

BALANCING . . Portable unit to balance large rotors in place; details. Bulletin 85-920, 8 pages. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Rm 1110, Pittsburgh 30, Pa. **IEN-01050**

BATTERIES . . "Slyver-Clad" units for motorized lift trucks; construction, rating chart to 660 amp. hr. Bulletin IT-516, 4 pages. C & D Batteries Inc., Cherry St., Conshohocken, Pa. **IEN-01051**

BATTERIES . . "Silvercel" rechargeable storage batteries; data on flashlight to power models. Bulletin 1, 4 pages. Yardney Electric Corp., 105-7 Chambers St., 2nd Flr., New York 7, N. Y. **IEN-01052**

BELTS . . Woven-nylon endless belts, 3/16 to 10 in. in width; list prices per inch in two to eight ply. Pocket Folder 400, 6 pages. Globe, Woven Belting Co., 1402 Clinton St., Buffalo 6, N. Y. **IEN-01053**

BENDING . . "Di-Acro" power machines to bend pipe, bar, sheet metal; specifications, application notes. Folder 16, 4 pages. O'Neil-Irwin Mfg. Co., 318 Eighth Ave., Lake City, Minn. **IEN-01054**

BORING . . Model-300 horizontal boring, drilling, milling machine; specifications, features. Catalog 300-T, 18 pages. Giddings & Lewis Machine Tool Co., Fond du Lac, Wis. **IEN-01055**

BRAZING . . Characteristics of silver brazing alloys, melting ranges, properties table. Bulletin T-1 Revised, 4 pages. Handy & Harman, 80-84 Fulton St., New York 7, N. Y. **IEN-01056**

BRONZE . . Cored and solid bars with machined surfaces; list by finished bearing to 10 in. od. "Universal Bars", 4 pages. Johnson Bronze Co., 601-5 S. Mill St., New Castle, Pa. **IEN-01057**

BRONZE . . Rod, welding rod, forgings, also brass; notes on new "Quantometer" laboratory control. Booklet, "Control", 8 pages. Titan Metal Mfg. Co., Craig & Seig Sts., Bellefonte, Pa. **IEN 01058**

BURNERS . . "Wide Range" oil burners and equipment; operation, performance chart. Bulletin 100-B, 4 pages. Peabody Engineering Corp., 580 Fifth Ave., 26th Flr., New York 19, N. Y. **IEN-01059**

CENTERS . . Machine center with wear-resistant core inside steel shank; sizes, list prices. "M-40-U Centers", 4 pages. Gorham Tool Co., 14402 Woodrow Wilson Ave., Detroit 3, Mich. **IEN-01060**

CLEANING . . Wet-abrasive-blast machine; description, examples of use in cleaning, burring, glass boring. "Cro-Hone", 4 pages. Cro-Plate Co., 800 Windsor St., Hartford 5, Conn. **IEN-01061**

CLEANING . . "Rotoblast" abrasive cleaning machine with "Turn-Style" loading table; operating details. Bulletin 219, 4 pages. Pangborn Corp., 230 Pangborn Blvd., Hagerstown, Md. **IEN-01062**

CONDUCTORS . . Bus duct for electric power in a plant; data on four types. Bulletin B-4271-A, 12 pages. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Pittsburgh 30, Pa. **IEN-01063**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9290 if you write the maker

C.H.F. Sectional Tables WITH SWING SEATS

MAXIMUM SEATING IN ANY SIZE SPACE

For Recreation Rooms . . . Factory Work Tables

Available in units to seat 4 to 24 people. "CHF" Sectional Tables may be purchased in varying lengths to meet your exact requirements. Seats swing completely under table out of the way to give you full aisle space. Your choice of seats . . . with or without backs . . . cast iron frame construction in a variety of colors. "CHF" Sectional tables are standard equipment for schools, factories, clubs, churches and all types of institutions.

WRITE FOR ILLUSTRATED CATALOG AND PRICE LIST!

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Keep Floors Clean — and SAFE!

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DRY SCRUBBER

Clean, safe floors keep production rates up and accident rates down! The KENT D-20 DRY SCRUBBER does the job—tackles impacted dirt and grease accumulations with a vengeance! Send for free literature—see what KENT can do!

KENT Brushes are self-sharpening

Five individual brushes rotate as a unit . . . and maintain top cutting efficiency as they work.

KENT DRY SCRUBBER Model D-20

Manufacturers of KENT Floor Machines, KENT Commercial Vacuum Cleaners, KENT Flux Recovery Units, KENT Furnace Cleaners

CLEAN WITH KENT EQUIPMENT

THE KENT CO. INC., 437 CANAL ST., ROME, N. Y.

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GRAY-MILLS

PUMP UNITS

Use these portable self-contained units as . . .

14 Standard Models

Coolant Systems for Machine Tools.

"Stand-bys" in case built-in pumps fail.

Die or Stock Lubricators on Punch Presses.

Special uses: Circulating, Transferring and Applying Liquids.

In a matter of minutes you can connect a Gray-Mills Portable Pump Unit to any machine and assure a continuous, controlled flow of coolant or other liquid. Units are complete with containers, motor driven pumps with filters, hose, control valves and flexible metal nozzles.

GEAR AND CENTRIFUGAL PUMPS
Volumes to 43 GPM—Pressures to 50 PSI—5-12-38 gallon containers.

Send for catalog to

GRAYMILLS CORPORATION
2009 Ridge Ave. Evanston, Ill.

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MAXIM SNOW THROWERS

PAY FOR THEMSELVES

Customers report savings well beyond cost of machine, in some cases after only 2 weeks of operation.

The Maxim Snow Thrower is self-propelled, throws the snow 40 feet away in any direction, no built-up banks, handles wet or dry snow. NOW USED IN 32 OF THE 48 STATES. Send for details and address of your nearest dealer.

SEND THIS COUPON FOR DETAILED INFORMATION

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Name _____

Address _____

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RUBBER Injection Molding

Precision Mass Production

We specialize in small precision rubber parts produced by our exclusive injection molding process. Where accuracy and close tolerances are required—*call for injection molding.* Hundreds of successful installations on hydraulic equipment . . . automotive machinery . . . radios and television . . . refrigeration equipment . . . pneumatic machinery . . . valves . . . electrical equipment. Natural or synthetic rubber. Special compounds made to your specific requirements. *Send us your blueprint or specifications for a prompt analysis and quotation.*

- O-Ring Seals
- Insulators
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- Bushings
- Pump Impellers
- Specialized units including rubber-bonded-to-metal

OFFICES: *New York* • Chicago • Cleveland • Detroit • Milwaukee

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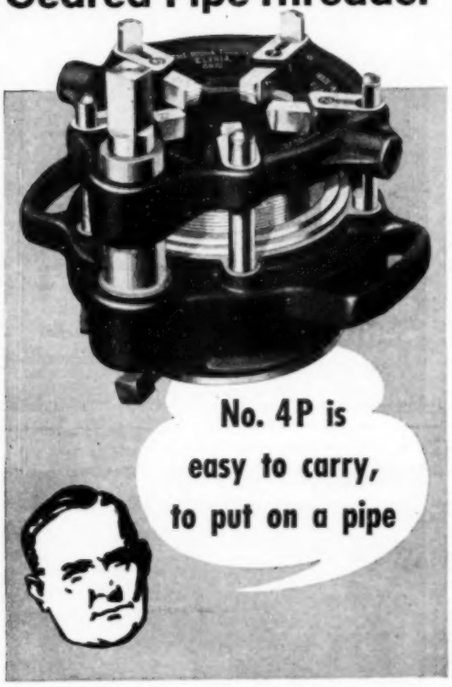
Rubber-Injection Molding

MINNESOTA RUBBER & GASKET CO. 3640 Wooddale Avenue Minneapolis 16, Minn.

BREVITY—Identify by IEN - 9295 if you write the maker

Easier to Handle this RIDGID Geared Pipe Threader



● You'll like the balanced loop handles that make it easy to swing the 4P around where you want it. Making it still more of a work-saver, mistake-proof workholder sets to size *before* you put it on pipe—only one screw to tighten, no bushings to fool with. 4 sets of 5 high-speed steel chaser dies give quick, clean threads on 2½", 3", 3½" and 4" pipe. Ratchet handle furnished—for power threading use with RIDGID Universal Drive Shaft and Power Drive. Save your muscles—buy this easier-to-handle RIDGID 4P at your Supply House.

RIDGID Work-Saver Pipe Tools

THE RIDGE TOOL CO. • ELYRIA, OHIO

NEW LITERATURE—Continued

"From Air Conditioning to Wood Working"

CONDUIT . . "Therm-O-Tile" underground steam-line conduit; sectional views, specifications. Bulletin 317, 8 pages. Porter-Hayden Co., 823-27 Frelinghuysen Ave., Newark 5, N. J. IEN-01064

CONDUIT FITTINGS . . Bakelite electrical insulating bushings and couplings; sizes, list prices. Folder 130-A, 4 pages. O. Z. Electrical Mfg. Co., 260-64 Bond St., Brooklyn 2, N. Y. IEN-01065

CONNECTORS . . "Sta-Kon" insulated crimp-type electric terminals for No. 22 to No. 10 wire; properties. Data Sheet S-4, 2 pages. Thomas & Betts Co., 69-A Butler St., Elizabeth 1, N. J. IEN-01066

CONSTRUCTION . . "Hi-Discharge Moto-Mixer" truck-type concrete mixer; illustrated construction details. Bulletin 51-28, 24 pages. Chain Belt Co., 1675 W. Bruce St., Milwaukee 4, Wis. IEN-01067

CONSTRUCTION . . Tractor shovels for excavating and bulk material handling; data on five models. "Payloader", 4 pages. Frank G. Hough Co., 841 Seventh St., Libertyville, Ill. IEN-01068

CORROSION PROOFING . . Adhesive plastic tape to wrap buried pipe against corrosion; properties. Folder E-SPF, 4 pages. Minnesota Mining & Mfg. Co., 902 Fauquier St., St. Paul 6, Minn. IEN-01069

CORROSION PROOFING . . Tar-base material for metal, masonry, asphalt surfaces; application data. "M-6", 4 pages. Pioneer Latex & Chemical Co., 47 Lincoln Blvd., Middlesex, N. J. IEN-01070

CONTRACT WORK . . In stampings and fabricated assemblies; equipment, examples of work. "Facilities Folder", 4 pages. American Forging & Socket Co., 51 Branch St., Pontiac, Mich. IEN-01071

CONTRACT WORK . . Defense production facilities by maker of steam generators, conveyors. Bulletin HF-19, letterhead request, 18 pages. Dutton Boiler, 602 Gibson, Kalamazoo 6, Mich. IEN-01072

CONTRACT WORK . . In design, manufacture of electronic equipment; facilities, examples. Bulletin SA-7-051, 8 pages. Electronic Engineering Associates, 51 Brittan, San Carlos, Calif. IEN-01073

CONTROLS . . "Inductrol" single-phase voltage regulators to 600 volts; construction, ratings, control. Bulletin GEC-705, 20 pages. General Electric Co., Dept. 6X-201, Schenectady 5, N. Y. IEN-01074

CONTROLS . . Electronic, to control and record humidity; application schematics. Data Sheet 10.5-4, 4 pages. Brown Instruments Div., 4456 Wayne Ave., Philadelphia 44, Pa. IEN-01075

CONTROLS . . Viscometers to record or control process liquids; operating principle, models, uses. Bulletin V, 8 pages. Norcross Corp., 245-49 Newtonville Ave., Newton 58, Mass. IEN-01076

CONTROLS . . Precision tuning-fork assemblies for frequency control; models, circuits. "Tuning Fork Resonators", 13 sheets. Philamon Laboratories, 5715-19 Third Ave., Brooklyn 20, N. Y. IEN-01077

CONTROLS . . "Stabiline" voltage regulators; ratings, performance, dimensions on a range of models. Bulletin S-351, 12 pages. Superior Electric Co., 92 Hannon Ave., Bristol, Conn. IEN-01078

CONVEYING . . "Pressman" portable belt conveyor for shop use; specifications on two models. Folder 6812, 4 pages. Arrow Products Inc., 415-19 Front Ave. N. W., Grand Rapids 4, Mich. IEN-01079

CONVEYING . . Belt, flight and special conveyor assemblies; picture examples to show scope of line. Mailing folder, 6 pages. Bosworth Mfg. Co., 6721-25 Denison Ave., Cleveland 2, Ohio IEN-01080

CONVEYING . . Solid steel conveyor belts to handle food, clay, chemicals; sizes, applications. "Steel Belts", 4 pages. Sandvik Steel Inc., 111 Eighth Ave., 8th Flr., New York 11, N. Y. IEN-01081

CRANES . . Model-1014 truck crane, 10 ton; specifications, work-range diagrams. Bulletin L-701, 6 pages. Unit Crane & Shovel Corp., 6400-13 W. Burnham St., Milwaukee 14, Wis. IEN-01082

CRUSHING . . Vertical-cone and horizontal sawtooth machines; models, specifications, uses. Catalog 46, 8 pages. Mercer-Robinson Co., 30 Church St., 4th Floor, New York 7, N. Y. IEN-01083

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BREVITY—Identify by IEN - 9297 if you write the maker

STOP ACCIDENTS with BRADY SAFETY SIGNS

Here's an AMAZING BRAND NEW SAFETY SIGN that will be welcomed by Safety Men! Brady Safety Signs stick to wood, glass, metal, concrete, etc. without moistening. May be applied to any clean surface in a jiffy. No screws, nails, bolts or skilled help necessary. All you do is peel from card, apply where wanted and the sign is up to stay.

Brady Safety Signs are made of durable cotton cloth, Silicone Coated to resist dirt, grime and moisture. CONFORM TO ASA Standard Z35.1-41. Select your requirements from a complete catalog of standard safety messages. Cost only a few cents per sign. Immediate delivery. Specials made to order.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

MANUFACTURERS OF SELF-STICKING PRODUCTS

WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED "SCOTCH" TAPE · MARKS & STENCILS

W. H. BRADY COMPANY

1633 E. SPRING STREET • CHIPPEWA FALLS, WIS.

BREVITY—Identify by IEN - 9298 if you write the maker

FOR YOUR PANEL DIALCO

A NOVEL and UNIQUE CIRCUIT INDICATOR

DESIGNED FOR NE-51 NEON LAMP For 110 or 220 volt circuits

The required resistor is an integral part of this assembly —"built-in."

RUGGED DEPENDABLE LOW IN COST

PATENTED: No. 2,421,321, Cat. No. 521308-997

WILL *YOU* TRY A SAMPLE?

Write on your company letterhead. We will act at once. No charge, of course.

SEND FOR THE 192 PAGE HANDBOOK OF PILOT LIGHTS

Among our *thousands of Pilot Light Assemblies* there is one which will fit *your special conditions.* Many are especially made and approved for *military* use. We pride ourselves on prompt deliveries—*any quantity.*

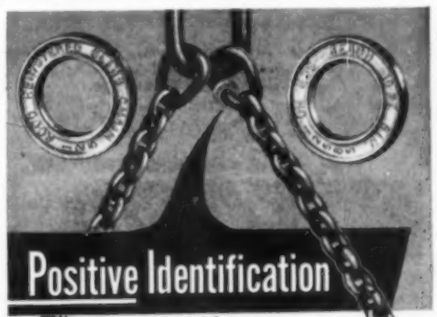
ASK FOR OUR APPLICATION ENGINEERING SERVICE

Foremost Manufacturer of Pilot Lights

The DIAL LIGHT COMPANY of AMERICA

900 BROADWAY, NEW YORK 3, N. Y. SPRING 7-1300

BREVITY—Identify by IEN - 9299 if you write the maker



Positive Identification

ACCO Registered SLING CHAINS

Don't guess that a certain sling chain will lift an expensive machine. Select the types, sizes, and materials needed for your work from the complete line of ACCO Registered SLING CHAINS. The positive identification ring on each one assures you that the unit was rigidly inspected and fully tested. *Send for* Catalog DH-80 *on selection, use, and care of sling chains.*

ACCO York, Pa., Atlanta, Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.

AMERICAN CHAIN DIVISION
AMERICAN CHAIN & CABLE

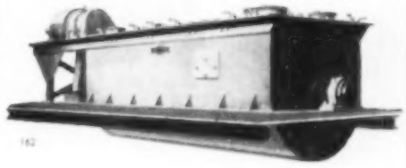
In Business for Your Safety

BREVITY—Identify by IEN - 9300 if you write the maker

SPROUT WALDRON MUNCY, PENNSYLVANIA

HORIZONTAL RIBBON MIXERS

ANY TYPE
ANY SIZE
ANY MATERIAL



In building high capacity mixers, structural design and adequate power are of extreme importance. Sprout-Waldron's know-how, experience and production facilities in this highly specialized field are called upon daily by America's leading processing plants. Write today for literature. Sprout-Waldron & Co., Inc., 5 Waldron Street, Muncy, Penna.

Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

SPROUT-WALDRON

BREVITY—Identify by IEN - 9301 if you write the maker

I CAN DO A BIGGER AND BETTER DAY'S WORK ON A

CHALLENGE WORK BENCH

Four Sizes
28 inches wide x 4, 5, 6 or 7 ft. long. Top 2" thick.

665

HERE'S WHY: Heavily ribbed, smoothly machined cast-iron top provides a "surface plate" . . . Table equipped with lock-leveling screws . . . Steel shelf in sturdy steel welded base . . . Steel tool box shelf, guard rail, and drawer with lock . . . Vise and individual light can be easily attached . . . Bench is portable. Write for details.

THE CHALLENGE MACHINERY CO.

Office, Factories, Show Room — Challenge TRADE-MARK ® — *Grand Haven, Michigan*

BREVITY—Identify by IEN - 9302 if you write the maker

PERMACEL News Graphic

SPEEDING PACKAGING WITH INDUSTRIAL TAPES

KEEPING TOBACCO PRODUCTS FRESH AND FRAGRANT for the Brown and Williamson Tobacco Corp. is another important job accomplished by TEXCEL-98 Colored Acetate Fibre Tape. The tape is used above to band and seal the tops of the tobacco tins and to affix the revenue stamps.

A PROMINENT HOME APPLIANCE MANUFACTURER makes wide and effective uses of PERMACEL Tapes in numerous packaging and shipping operations. Particularly useful is PERMACEL-63 Stain-Resistant Cloth Tape which applies easily, sticks tight, and leaves no residue.

FREE!

JUST OFF THE PRESS

New 32-page use book. Send for your copy today. Over 100 close-up photographs of new and dollar-saving uses of tape. Write Dept. 65.

INDUSTRIAL TAPE CORP., NEW BRUNSWICK, N. J.

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INDUSTRIAL TAPES

INDUSTRIAL TAPE CORPORATION, NEW BRUNSWICK, N. J.

makers of ®TEXCEL Cellophane Tape, and a complete line of pressure-sensitive tapes for industry.

NEW LITERATURE—Continued

"Note the 'O' numbers on literature"

DRILLING . . "Darra-James" single and multiple-spindle drill presses; standard and production models. Bulletin DP-51, 4 pages. Toolkraft Corp., 51 Plainfield St., Springfield 1, Mass. **IEN-01084**

DRIVES . . Stock sprockets and "Atlas" roller chain; dimensions, list prices, design, selection. Catalog 51, 72 pages. E. B. Sewall Mfg. Co., 696-702 Glendale St., St. Paul 4, Minn. **IEN-01085**

DRYING . . Units for instrument air, using Sovabead desiccant; models, selection, list prices. Bulletin DD-130, 4 pages. Industrol Corp., 470-74 Westfield Ave., Roselle Park, N. J. **IEN-01086**

ENGINES . . Air-cooled gasoline engines, 3 to 30 hp.; specifications, performance curves. Bulletin S-130, 8 pages. Wisconsin Motor Corp., 1908-12 S. 53rd St., Milwaukee 46, Wis. **IEN-01087**

EQUIPMENT . . Steam turbines, condensers, ejectors, tube cleaners, blowers, strainers, motors, generators; review. Bulletin Q-14, 16 pages. Elliott Co., 49 Keeley St., Jeannette, Pa. **IEN-01088**

FABRICATING . . Sheet-metal products such as shop boxes, pans, housings; illustrated examples. "Metal Fabricators", 4 pages. Platt & Labonia Mfg. Co., North Haven, Conn. **IEN-01089**

FASTENINGS . . Twin-thread wood screw with relieved shank and parallel sides; properties, sizes. "Holtite Twin-Fast", 4 pages. Continental Screw Co., New Bedford, Mass. **IEN-01090**

FILTERING . . Synthetic-fiber filter fabrics; samples and data on nylon, orlon, Dynel, Vinyon N. "Feon Fabrics", 6 pages. Filtration Engineers, 153-57 Oraton St., Newark 4, N. J. **IEN-01091**

FLOORS . . Materials and placing service for industrial floors; review. "Why Engineer an Industrial Floor", 12 pages. Flash-Stone Co., 36 E. Rittenhouse St., Philadelphia 44, Pa. **IEN-01092**

GAGES . . U-tube and other manometers, draft gages, flow meters; specifications, list prices. Catalog C-12, 44 pages. Meriam Instrument Co., 10918-22 Madison Ave., Cleveland 2, Ohio **IEN-01093**

GAGES . . Steel and carbide gage blocks; units and sets, notes on application and care. Catalog, letterhead request, 32 pages. Webber Gage Co., 12902 Triskett Road, Cleveland 11, Ohio **IEN-01094**

GRINDING . . Machine to grind pipe-threading chasers and cut-off wheels; specifications. "Chaser Grinder", 4 pages. Continental Machine Co., 1950-54 N. Maud Ave., Chicago 14, Ill. **IEN-01095**

GRINDING . . Flexible shafts, handpieces, tools, accessories; detail descriptions. Catalog T-51, 52 pages. S. S. White Dental Mfg. Co., 10 E. 40th St., 23rd Flr., New York 16, N. Y. **IEN-01096**

HANDLING . . Wood-slat and Masonite-panel boxes for material handling; types, stock sizes. "Industrial Containers", 16 pages. G. B. Lewis Co., 4 Montgomery St., Watertown, Wis. **IEN-01097**

HEAT TREATING . . Pit-type convection furnaces; cut-away construction, standard models. Bulletin IND-451, 8 pages. Hevi-Duty Electric Co., 4210-14 W. Highland Ave., Milwaukee 1, Wis. **IEN-01098**

HEAT TREATING . . Gas furnaces for heat treating and melting, also burners; models, data summaries. Catalog 51, 24 pages. Johnson Gas Appliance Co., Cedar Rapids, Iowa. **IEN-01099**

HEAT TREATING . . Gas and Electric furnaces, also torches, rivet heaters, burners; data summaries. Bulletin NX-1, 4 pages. Mahr Mfg. Co., 1786 N. 2nd St., Minneapolis 11, Minn. **IEN-01100**

HEATING . . Electric heaters for fuel oil, thermostat control; models, heating rate chart for 2 to 60-kw. units. Catalog 709, 4 pages. Hauck Mfg. Co., 126-34 Tenth St., Brooklyn 15, N. Y. **IEN-01101**

HEATING . . Gas-fired machines for brazing, heat-treating, melting; picture examples. Bulletin S-6.3, 16 pages. Selas Corp. of America, 551 E. Erie Ave., Philadelphia 34, Pa. **IEN-01102**

HOSE FITTINGS . . "Blue Brute" taper-seal hose fittings; illustrated types and sizes. Bulletin H-1200-B44, 4 pages. Worthington Pump & Machry. Corp., 51 S. 2nd St., Dunellen, N. J. **IEN-01103**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9304 if you write the maker

A Paid News Advertisement by Kollmann Mfg. Co.

CLEANS DRAIN AND SUPPLY LINES

. . . Advanced design machine features instant-acting clutch and sectional cables for fast, SAFE operation by one man. Cuts maintenance costs and "down" time.

This fully portable, electric power machine is ideal for clearing obstructions from underground or overhead drains and supply lines. Adaptable to 4 cable sizes and to all pipe sizes from 1¼" to 12". Handles up to 200' of cable at 700 R.P.M. **under instant control.**

Convenient 15' sections of tempered steel cable, couple and lock instantly and are enclosed by guide hose. There is no unwieldy cable length to damage operating area or injure operator.

Patented instant-acting clutch provides finger tip control for starting, stopping and reversing. Cutters and cables clear any combinations of traps, elbows and bends in sewer or industrial drains, conductor lines concealed or exposed downspouts and supply lines. Easily carried and operated by one man, machine can be passed through an opening 14 by 22 inches and needs only 3 sq. ft. of floor space. Quickly pays for itself through reduced maintenance costs and less out-of-service time. For full details and name of nearest distributor, write Kollmann Manufacturing Company, 4850 Peach St., Erie, Pa., or use the enclosed Reader Service Form.

KOLLMANN MANUFACTURING CO.
4850 Peach Street, Erie, Pa.

BREVITY—Identify by IEN - 9305 if you write the maker

ROTO FINISH

GIVES YOU 5 OUTSTANDING ADVANTAGES for Deburring, Descaling and Finishing Operations

1. Eliminates tedious hand filing, scraping, polishing, deburring, etc. to save many man hours.
2. Provides absolute uniformity in quantity lots.
3. Maintains exacting tolerances on precision parts where no dimensional change is allowable.
4. Imparts a finish mechanically that was formerly considered possible only by hand methods.
5. Low initial cost — requires minimum maintenance. No exhaust systems required.

Send samples for free demonstration

Roto-Finish COMPANY

associated with The Sturgis Products Co.

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ORIGINATORS OF THE ROTO-FINISH PROCESSES

BREVITY—Identify by IEN - 9306 if you write the maker

THREE SAFE, SURE CONTROLS for HAZARDOUS LOCATIONS

Enclosed in Approved Blast-Proof, Dust-Tight Housings

TYPE EJO THERMOSTAT A precisely adjustable control. Narrow calibrated ranges for liquids or gases. Adjustable ranges, 120 F or 250 F between limits of −120F and 600F. Ratings AC 1200 watts 125-250 V AC. Uses any United remote bulb assembly.

TYPE EJR VACUUM SWITCH For close differential control on exposed applications. Ranges from 0-180 psi pressure, 30" Hg vac to 20 lb. press. Diff. 4" WC to 2 lb. adjustable or fixed at customer's option.

TYPE EGL PRESSURE CONTROL A rugged pilot switch for industrial uses involving the control of air, gas and liquids. Ranges from 0-350 psi. Diff. from 2-15 psi, electrical ratings AC 1200 watts 125-25 V AC.

All controls tapped for standard pipe fitting. All may be mounted in any position.

Write for complete details today

UNITED ELECTRIC CONTROLS COMPANY
80 School Street
Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

BREVITY—Identify by IEN - 9307 if you write the maker

TRABON LUBRICATING EQUIPMENT Delivers a Measured Amount of Lubricant

- To Any Bearing . . .
- In Any Location . . .
- Under Any Condition

In the plant of Cans, Inc., Chicago, a Trabon system services 221 points of lubrication on this machine, which produces 310 cans per minute!

Since 1930 Trabon has been engineering, manufacturing, and installing centralized lubricating systems . . . for plain bearings, roller bearings, and ball bearings . . .

Since 1922 Trabon has been helping industry solve its lubricating and bearing problems.

Call Trabon in regard to your lubrication requirements.

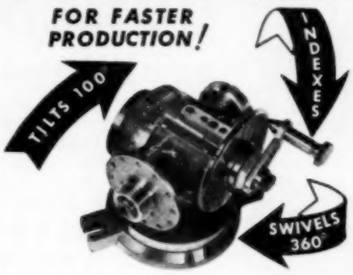
Trabon
OIL AND GREASE SYSTEMS

TRABON ENGINEERING CORP.
1814 East 40th Street
Cleveland 3, Ohio

BREVITY—Identify by IEN - 9308 if you write the maker

THE *unusual* ELLIS DIVIDING HEAD

FOR FASTER PRODUCTION!



"Versatile" is the word for the unusual Ellis Dividing Head. This beautifully designed and built unit can extend the profit and production possibilities of your mills, grinders, drill presses and jig borers. It has 6½" swing, or 11" swing when used with riser blocks. Its fully universal action provides every needed setting, so that most work can be completed without rehandling. Work may be held between centers, or in chucks or collets. Write for catalog giving complete details!

NICHOLS-MORRIS CORPORATION
50-W CHURCH STREET, NEW YORK 7, N. Y.

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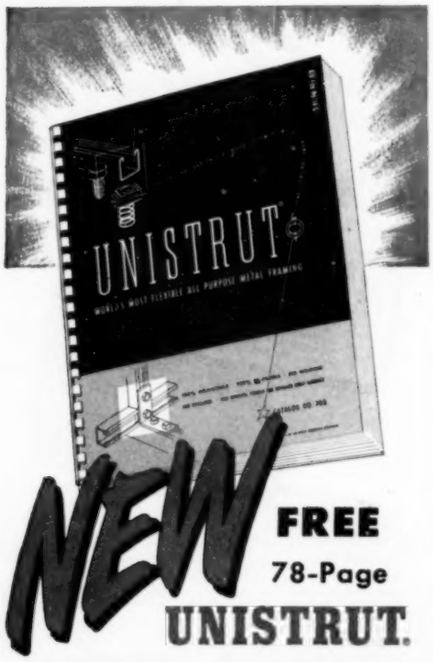

NEW FREE 78-Page UNISTRUT CONSTRUCTION CATALOG

78 Illustrated Pages on How to Frame, Hang, Support and Mount many kinds of Mechanical and Electrical Equipment with UNISTRUT All-Purpose Metal Framing

Simple and Complete . . . Easy to Use . . . Loaded with Pictures, Data and Complete Information . . . Shows Details of Product and Applications . . . How to Order

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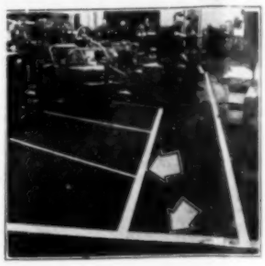
BREVITY—Identify by IEN - 9311 if you write the maker

MARKING . . Self adhesive tape to mark aisles and areas in a plant

Source: MINNESOTA MINING & MFG. CO.
902 Fauquier St., IEN-P-8-1, St. Paul 6, Minn.



New use is illustrated for the company's No. 471 Scotch brand plastic-film self-adhesive tape on a plant floor. The tape is 4 mils in thickness, which is negligible. Tests indicate it will outwear traffic lines that are painted in place. It can be lifted to alter the marked-off areas without leaving a trace of the former line. Seven colors are available in widths of 2, 3 and 4 in. in 36-yd. rolls.

BREVITY—Identify by IEN - 9312 if you write the maker

TESTING . . Electronic instrument records sulfur dioxide in the air

Source: LEEDS & NORTHRUP CO.
4934 Stenton Ave., Philadelphia 44, Pa.

Folder ND46-91 presents details

Operating range is from 0 to 5 parts per million of sulfur-dioxide air pollution for both integrating and non-integrating assemblies of the new Thomas Autometer. The integrating assembly continuously records actual concentration parts per million, checks zero reading every 30 min. and marks off each cubic foot of air sample. The non-integrating assembly provides a continuous record of sulfur-dioxide concentration for applications where this information alone is sufficient.

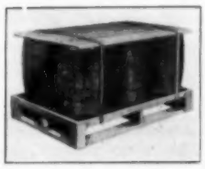
Electrolytic conductivity is employed as the means for measurement. A continuous sample of air is passed through a solution which absorbs the sulfur dioxide causing a change in the electrolytic conductivity of the solution.

A Speedomax electronic recorder accumulates the information on its strip chart; requires only nominal attention.

BREVITY—Identify by IEN - 9313 if you write the maker

HANDLING . . Steel pallet and cover to move, store, protect filled kegs

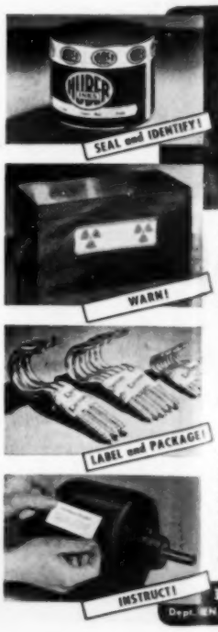
Source: PHILLIPS MINE & MILL SUPPLY CO.
2300 Jane St., Pittsburgh 3, Pa.



Model KP-6 is a new combination of steel pallet with a recessed top and a formed-steel cover, the latter to strap in place over a load of kegs as shown in the illustration. The resulting unit load can be handled with a fork lift for transportation or stacking in storage. The pallet takes six standard kegs.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9314 if you write the maker



IT PAYS TO USE COST-CUTTING LABELON PRINTED PRESSURE SENSITIVE *Plastic* TAPE

Every day, industry discovers new ways to speed production, improve service and *cut costs* with printed, plastic, pressure-sensitive Labelon Tape. For example, you can:

SIMPLIFY MARKING of bulky products
CODE WIRES, PIPES, PARTS
LABEL and PACKAGE small, odd-shape items
PROVIDE WARNING • INSTRUCT USERS
SEAL and IDENTIFY CONTAINERS
LABEL INSPECTED ITEMS

Labelon will print your message or design on either cellophane or acetate fibre tape, available in 13 colors or transparent. Stock widths: ⅛" to 3"; special widths on request. Write today for literature, prices, and samples.

LABELON TAPE CO., Inc.
Dept. IEN, 450 Atlantic Ave., Rochester 7, N.Y.

BREVITY—Identify by IEN - 9315 if you write the maker

Unit "UTILITY" HOIST
HYDRAULICALLY OPERATED FOR SHOP OR TRUCK
FAST . . . EASY . . . SAFE!

NOW . . . reduce material handling time to a minimum with the fast UNIT UTILITY HOIST. One man handles heavy loads where several men were used before. Eliminates serious accidents caused by heavy hand lifting. Reduces labor costs, increases work output per day.

★ FROM SHOP TO TRUCK HOIST in seconds! Simply lift UNIT UTILITY HOIST from 3-wheel frame, place in socket or well mounted on truck bed, work bench, loading dock or machine tool. Hoist swings 360° in well.

Write Dept. N for Complete Details

UNIT HYDRAULIC EQUIPMENT

Manufacturers of hydraulic cylinders for original equipment.

UNIT MANUFACTURING CO
1229 HARMON PLACE • MINNEAPOLIS 3, MINNESOTA

BREVITY—Identify by IEN - 9316 if you write the maker

WHERE'S THE FIRE?

HOW INVISIBLE FLAMES EAT UP PROFIT . . . RUIN PRODUCTION . . RAISE COSTS!

RUST IS S-L-O-W FIRE . . . dangerous, deadly and hard to stop! Like fire itself, rust feeds on oxygen as it burns its way into thousands of metal products. Fortunately, you can protect your plant and products against rust. Whether you are packaging for Uncle Sam or need a rust preventive tailored to do a specific job, there's a NOX-RUST product to meet your requirements. Moreover, the cost of this "rust insurance" is surprisingly low. Why not investigate today?

Call NOX-RUST
America's Leading Producer of Rust Preventive Products!

Finding the *best* rust preventive for you is a NOX-RUST habit . . . that's why many major corporations rely on NOX-RUST for rust preventives to meet special needs. If you'd like more information, without obligation, call or write today.

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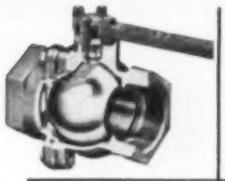
BREVITY—Identify by IEN - 9317 if you write the maker

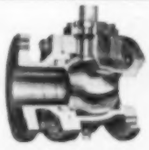
Exactly RIGHT FOR THE JOB . .
ROCKWOOD Ball VALVES

FULL ROUND FLOW • LEAK PROOF •
Quick Opening and Closing • No Maintenance



Rockwood Ball Valve made of bronze with screwed ends is available in ½" to 2" pipe sizes. 300 p.s.i. working pressure. For service in oil refineries, food, paper, textile, chemical, rubber, and many other plants.

Rockwood Cast Steel Ball Valve available in 3" and 4" pipe sizes. Recommended for refinery, pipe line and general use. 300 W. O. G.



Send today for Folder V-4

ROCKWOOD SPRINKLER CO.
40 HARLOW STREET WORCESTER 5, MASS.

BREVITY—Identify by IEN-9318 if you write the maker

Sabin COIL TRUCK

SAVES TIME, LABOR In HANDLING--
STRIP COILS,
WIRE COILS,
BOX STRAPPING,
WHEELS,
TIRES,
LATHE CHUCKS
OR FACE PLATES,
AND ALMOST
ANYTHING WITH
A HOLE THROUGH
IT.

AN EASY ONE-MAN JOB!

You can run this truck up to article, passing arm through hole, then pull back on handle to pick it up. Follower wheel minimizes trucking effort.

WRITE FOR BULLETIN

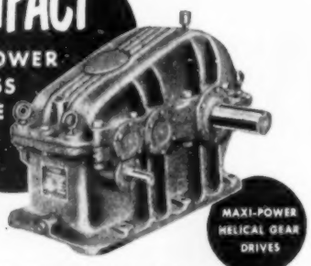
THE SABIN MACHINE CO.
6540 CARNEGIE AVE.
CLEVELAND 3, OHIO

OTHER SABIN TRUCKS: Barrel, Keg, Box and Package Trucks; Tote Pan, Carboy, Shop and Special Trucks.

BREVITY—Identify by IEN-9319 if you write the maker

COMPACT

MORE POWER IN LESS SPACE



MAXI-POWER HELICAL GEAR DRIVES

Maxi-Power Parallel Shaft Helical Gear Drives, with precision processed gearing, improved materials and heat-treatment, closer manufacturing tolerances, permit the selection of smaller size, lighter weight units.

Generated helical gearing, positively located for full tooth engagement across the entire gear face means improved performance.

Close backlash tolerances, reinforced housing design, plus antifriction bearings throughout, provide smooth, quiet operation.

Write for Bulletin MPB

FOOTE BROS. GEAR AND MACHINE CORPORATION
Dept. IEN, 4545 S. Western Blvd. • Chicago 9, Illinois

FOOTE BROS.
Better Power Transmission Through Better Gears

BREVITY—Identify by IEN-9320 if you write the maker

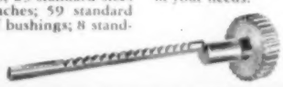
Cut KEYWAYS for 1¢ each

with du MONT standard KEYWAY BROACH KITS

Cut 'em any width from 1/16" to 1" in any bore from 1/4" to 3"—in gears, cutters, pulley hubs, collars, couplings, etc. Do the work in 60 seconds.

du Mont makes 21 standard sets; 23 standard sizes of broaches; 59 standard sizes of bushings; 8 standard sets of Metric keyways and broaches; plus a wide range of special production type guideless broaches.

There is a time and money saving du Mont Keyway Broach or Kit to fit your needs.



MAIL THE COUPON for the facts

The du MONT CORPORATION, Greenfield, Mass.

Please mail descriptive folder and price list N on *Minute Man Keyway Broaches and Kits.*

Name .....

Company .....

Address .....

NEW LITERATURE—Continued

"Addresses so you can write direct"

INCINERATORS . . For a range of industries and combustible material; data on 19 models. "Brule Incinerators", 6 pages. Goder Incinerator Corp., 405-9 S. Dearborn St., Chicago 5, Ill. **IEN-01104**

INSULATING . . Electrical materials for 175 deg. C. and up; properties, sizes, uses. "Class H", 16 pages. Irvington Varnish & Insulator Co., 4-8 Argyle Terrace, Irvington 11, N. J. **IEN-01105**

MARKING . . "Mark-Rite" gravity-flow paint striping machine for floors, roads; sectional details. Folder 1001, 4 pages. Joseph D. Grigsby Co., 1202-6 K St. N. W., Washington 5, D. C. **IEN-01106**

MARKING . . Machines and tools for parts marking, embossing, engraving; review. "Metal Identification", 4 pages. Roberts Numbering Machine Co., 702 Jamaica Ave., Brooklyn 8, N. Y. **IEN-01107**

MELTING . . Electrically-heated pots and tanks to melt or dispense waxes and compounds; models, capacities. Bulletin 042-W, 6 pages. Sta-Warm Electric Co., Ravenna, Ohio **IEN-01108**

METAL TREATING . . "Lithoform" phosphate-forming material for zinc, galvanizing prior to paint; application. Folder 273-A, 4 pages. American Chemical Paint Co., Ambler, Pa. **IEN-01109**

METAL TREATING . . Material to clean and phosphate-coat metal parts; description, uses. Folder, "Klem-Kote", 4 pages. Klem Chemicals Inc., 14399-403 Lanson Ave., Dearborn, Mich. **IEN-01110**

METERS . . Recording Orsat-type instrument for flue gas; operation schematic, sampling, models. Bulletin 51-553, 4 pages. Hays Corp., 740-44 E. 8th St., Michigan City, Ind. **IEN-01111**

METERS . . For petroleum and process liquids; operation, selection, table of materials. Bulletin OG-400, 12 pages. Rockwell Mfg. Co., 402 N. Lexington Ave., Pittsburgh 8, Pa. **IEN-01112**

MILLING . . Tool and die machine, 8 by 18 in.; detail description, work examples. Bulletin M-1731, 20 pages. Cincinnati Milling Machine Co., Marburg & Kline Sts., Cincinnati 9, Ohio **IEN-01113**

MILLING . . Swiss-made machine for single-job or production use; specifications, accessories. "Schaublin SV-12", 16 pages. Carl Hirschmann Co., 28-32 Park Ave., Manhasset, N. Y. **IEN-01114**

MILLING . . Lathe or other machine attachment to do milling, boring, grinding; description, uses. Bulletin 8, 22 pages. Versa-Mil Co. of N. Y., 30 Church St., Rm. 527-E, New York 7, N. Y. **IEN-01115**

MOTOR CONTROL . . Polarized field frequency controls for synchronous motors; diagrams. Bulletin 3100-PRD-204, 8 pages. Electric Machy. Mfg. Co., 1335 Tyler, Minneapolis 13, Minn. **IEN-01116**

MOTORS . . Enclosed fan-cooled units with integral heat exchangers; construction details. Bulletin 05-B-7150A, 6 pages. Allis-Chalmers Mfg. Co., 909 S. 70th St., Milwaukee 14, Wis. **IEN-01117**

PACKAGING . . Machine to remove empty cans from single-depth cases; operating details. Bulletin 2001, 4 pages. Barry-Wehmiller Machinery, 4664 W. Florissant, St. Louis, Mo. **IEN-01118**

PACKAGING . . Carton-filling and sealing machine for granular products; operation, specifications. "Carton Filler", 4 pages. Clybourn Machine Corp., 6477-81 N. Avondale, Chicago 31, Ill. **IEN-01119**

PACKAGING . . Machine to apply heat-seal or thermoplastic labels on products and containers; review. "No-Glu", 4 pages. Dumatic Industries, Jefferson below 12th, Phila. 22, Pa. **IEN-01120**

PACKAGING . . Example of wrapping machines and the products they handle; notes on requirements. "Folder 131", 4 pages. Package Machinery Co., Longmeadow, Springfield, Mass. **IEN-01121**

PACKAGING . . Portable electric heat-sealing tool for coated or laminated barrier materials; operation. "Model 6", 4 pages. Packaging Industries, 48-52 Church St., Montclair, N. J. **IEN-01122**

PHOTOGRAPHING . . Analysis equipment for aerial photographs; data summaries. "Photogrammetric Instruments", 16 pages. Abrams Instr. Corp., 602 E. Shiawassee, Lansing 1, Mich. **IEN-01123**

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BREVITY—Identify by IEN-9321 if you write the maker

SPEEDY sez:
"WANT YOUR MATERIALS HANDLING SYSTEM"
FLEXIBLE?

"Get SPEEDWAYS Conveyors! Quickly taken down, moved, set up where needed—without tools. Lightweight . . . low cost . . . handle loads up to 600 lbs.—economically. Wheel, roller and power belt types. Full line of accessories. FAST SERVICE. Phone your local SPEEDWAYS man (he's in the classified phone book)—or write us."

SPEEDTUBE GRAVITY ROLLER CONVEYORS support 70 lbs. per foot. Best for hard-to-handle objects like milk cans, kegs, baskets—and for general use. In 5' and 10' straight lengths, 45° and 90° curves. Standard widths 12", 15", 18". Mounted on standards or casters. Light, sturdy, portable—in use everywhere.

FREE—Helpful bulletin "How to Order Correct Size Conveyor." Phone your local SPEEDWAYS man, or write us today. No obligation.

SPEEDWAYS Conveyors, Inc.
1244 Niagara St., Buffalo 13, N. Y.
Also Mfd. in Canada; Union of So. Africa

BREVITY—Identify by IEN-9322 if you write the maker

SAVE MONEY
STOP AIR LEAKS

WITH Original BOWES couplings

PRESSURE SEATED
AIR VALVES
NIPPLES • FITTINGS • BLOW GUNS

ALL YOUR AIRLINE REQUIREMENTS AT ONE SOURCE. SEE YOUR SUPPLY HOUSE SALESMAN

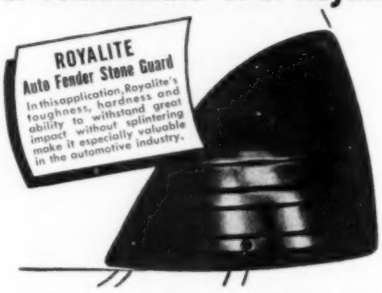
...Write for new catalog describing complete line.

THE UNITED STATES AIR COMPRESSOR COMPANY
5300 Harvard Avenue Cleveland 5, Ohio

BREVITY—Identify by IEN-9323 if you write the maker

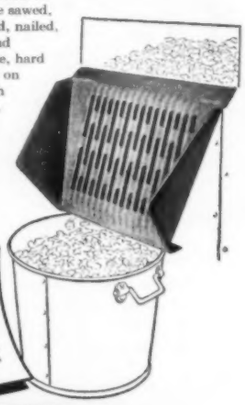
2 out of

for remarkable U. S. Royalite



ROYALITE Auto Fender Stone Guard
In this application, Royalite's toughness, hardness and ability to withstand great impact without splintering make it especially valuable in the automotive industry.

There is virtually no end to the uses of U. S. Royalite. Designers and engineers say it gives them new freedom of design, lets them attain an efficiency often never possible with any other thermoplastic. Royalite is obtainable either standard or flame-resistant. It can be sawed, sheared, sanded, punched, nailed, bolted, riveted, sewed and cemented. Stiff or flexible, hard or soft, it can be formed on standard equipment with conventional techniques. The engineering staff of United States Rubber Company will be glad to work with you or advise you on any application of Royalite you may suggest.



ROYALITE Shaved Ice Chute
Light in weight, non-warping, waterproof—this unique molded ice chute is perfect for the job. Fabricated by Regal Plastics Co., Kansas City, Missouri.

u.s. Royalite®
STANDARD OR FLAME RESISTANT

SEE NEXT PAGE FOR LIST OF U. S. ROYALITE FABRICATORS

UNITED STATES RUBBER COMPANY
2638 North Pulaski Road, Chicago 39, Illinois

▼ BREVITY—Identify by IEN - 9325 if you write the maker ▼

Forbes Offers dependable service . . . *and QUALITY* . . . in Flat-Steel Washers. U. S. Standard Sizes, packed in 200# kegs. Our present range of manufacture:
⅜" ½" ⅝" ¾" ⅞" 1" 1⅛" 1¼" 1½" 1¾"

Your orders and inquiries will receive our prompt attention.

FORBES STEEL CORPORATION
CANONSBURG, PENNSYLVANIA

▼ BREVITY—Identify by IEN - 9326 if you write the maker ▼

1,000 uses
the Versatile Thermoplastic

ROYALITE IS:

- ★ Standard or flame-resistant
- ★ Lightweight
- ★ Non-splintering
- ★ Non-Warping, non-corrosive
- ★ Tough
- ★ Highly resistant to impact
- ★ Waterproof, stainproof
- ★ Not affected by oils, most acids, alkalies
- ★ Available in different colors, for easy classification
- ★ Stable under changing atmospheric conditions
- ★ Exceptional electrical insulating properties
- ★ Low rate of heat conductivity

U.S. Royalite — STANDARD OR FLAME RESISTANT

CONSULT THESE EXPERIENCED FABRICATORS OF ROYALITE

CALIFORNIA
Horace L. Blackman Co., 287 So. Robertson Blvd., Beverly Hills
General Plastics Corp., 723 W. Broadway, Glendale 4
Engineering Plastics Co., 1475 El Mirador Dr., Pasadena 3
National Plastics Industries, 425 Divisadero St., San Francisco
Hollywood Plastic Arts, 503 W. Olympic Blvd., Los Angeles 15
Swedlow Plastics Co., 5527 District Blvd., Los Angeles 22
Westwood Craftsmen, Inc., 2043-45 Pontius Ave., Los Angeles 25
Associated Mfg. Co., 541 S. Fair Oaks Ave., Pasadena 2

COLORADO
Pikes Peak Plastic, 5 W. Cucharras St., Colorado Springs
Denver Plastics, Inc., 260 S. Dale Court, Denver 9

FLORIDA
Plastics Design & Mfg. Company, Box 61, Tallahassee

GEORGIA
Gladwin Plastics, 542 Courtland St., N.E., Atlanta

ILLINOIS
Arrow Plastic, 1539 N. Throop St., Chicago 22
Associated Plastics Fabricators, 164 N. May St., Chicago 7
L. A. Goodman Mfg. Co., 131-145 W. 63rd St., Chicago 21
Laidman Kriepin Co., 1308 N. Halsted St., Chicago 22
Cortland Industries, Inc., 4545 W. Cortland Street, Chicago 39
Neo Products Co., 2534-38 S. Kedzie Ave., Chicago 23
O-Lin Products, 3755 Kedzie Avenue, Chicago 18
Precision Plastic Products Inc., 628 W. Lake St., Chicago 6

INDIANA
General Plastics Corp., 1400 N. Washington, Marion

MARYLAND
Fawn Plastics Co., 2902 Hamilton Ave., Baltimore 14

MICHIGAN
Cadillac Plastic Co., 651 W. Baltimore, Detroit 2
Imperial Industries, 4435 Walker Ave., Wayne
Kline Mfg. Co., 50 Cottage Grove S.W., Grand Rapids 2
Reynolds Plastics, Inc., 3445 W. Forth St., Detroit
Fabri-Kal, 242 East Kalamazoo Avenue, Kalamazoo
Woodall Industries Inc., 7565 E. McNichols Rd., Detroit 34

MINNESOTA
T. O. Plastics, 58th & Longfellow, Minneapolis
Plastics, Inc., Chestnut & Ryan Sts., St. Paul 2

MISSOURI
Regal Plastics Co., 710 Main St., Kansas City

NEBRASKA
Omaha Plastics Co., 1470 S. 16th St., Omaha 9

NEW JERSEY
Sillcocks-Miller Co., 10 W. Parker Ave., Maplewood
Stokes Molded Products, Inc., Taylor St. at Webster, Trenton 4
Thermacote Co., 320 Jefferson St., Newark 5
Van Beck Industries, 23 Park St., Orange

NEW YORK
Rassons Molded Products, 1424 W. Farms Rd., New York 60
Copeland Displays, Inc., 537 W. 53rd St., New York 19
Curbell Inc., 1700 Elmwood Ave., Buffalo 7
Dual Fabricators Corp., 808 Driggs Ave., Brooklyn 11
Dura Plastics Inc., 1 W. 34th St., New York 1
Durable Formed Products, Inc., 329 Canal St., New York 13
Mastercraft Plastics Co., Inc., 95-32 150th St., Jamaica 4
Steiner Plastics Mfg. Co., 47-30 33rd St., Long Island City 1

OHIO
Fabri-Form Co., Box 36, Cambridge
The Baxter Company, 15 E. 2nd Street, Cincinnati

PENNSYLVANIA
Halsen Mfg. Co., 5919 Webster St., Philadelphia
Lee Plastics, A and Lippincott St., Philadelphia 34
Pearson-Beilinghof, Inc., 18 North State Street, Newton
The Bell Plastics Co., Inc., 600 Heinz Street, Pittsburgh 12

TENNESSEE
Plasti-Line, Inc., Jacksboro & Broadway, Knoxville 18

TEXAS
Plastic Engineering Co., 2101 69th St., Houston 11
Plastic Products of Texas, 1400 Cedar Springs, Dallas

WASHINGTON
K. B. Plastics, Inc., 1817 So. 1st St., Yakima
Mason Plastics Company, 1121 Westlake North, Seattle

WISCONSIN
Midland Plastics Inc., 227 N. Water St., Milwaukee 2

The United States Rubber Company at 2638 North Pulaski Road, Chicago, Illinois, has complete Engineering, Designing, and Styling Departments to assist fabricators on the technique to employ, and in the art of fabricating most efficiently with ROYALITE.

▼ BREVITY—Identify by IEN - 9328 if you write the maker ▼

DRILLING . . Carbide tool for hardened steel, 1/16 to 1/2 in.

Source: RAYMAC MFG. CO.
3728 Cass Ave., Detroit 1, Mich.

This new drill in ¼-in. size, will drill a hole in 50-65 Rockwell-C hardened steel with rotation at 350 rpm. A ½-in. drill cuts best in the same steel at 200 rpm. The drill produces an accurate clean hole, does not heat up to a point where the chips will be discolored. Sizes range in 32nds between $\frac{1}{16}$ and ½ inch. Overall length is 2 in. up to ⅝ in. in diameter. It is 2½ in. from there to ½ inch. Flute length is ½ to ¾ inch. Tolerance is within 0.001 inch. The company does not recommend steel shanks on tools under $\frac{1}{16}$ inch.

▼ BREVITY—Identify by IEN - 9329 if you write the maker ▼

TESTING . . Electric meter indicates adherence of porcelain enamel

Source: PORCELAIN ENAMEL INSTITUTE
1008-12 Vermont Ave. N. W., Washington 5, D. C.

Meter list $625
press list $275

New meter, now available through the Institute, provides a means to indicate adherence of porcelain enamel to metals ranging from No. 13 to No. 24 in gage thickness. The meter is employed with a deforming press in which a test sample of enameled metal is applied in an action tending to break the enamel away from the metal surface.

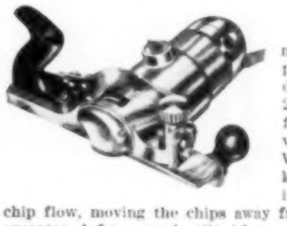
Estimated amount of bare metal resulting from the deformation is expressed as a percentage of the test area and is used to place the enamel in one of several broad classifications.

The meter mounts a large number of probes and is placed upon the deformed metal surface, following press application. The number of probes conducting current, due to contacting the bare metal, is used to determine bare-metal percentage.

▼ BREVITY—Identify by IEN - 9330 if you write the maker ▼

WOOD WORKING . . Electric plane for portable use, 20,000 rpm. speed

Source: STANLEY ELECTRIC TOOLS DIVISION
476-82 Myrtle St., New Britain, Conn.



Type J38 is a new motor-driven portable plane in which the motor drives a cutter spindle at 20,000 rpm. Capacity is for a cut to $1\frac{11}{16}$ in. in width and $\frac{3}{16}$ in. in depth. Ventilation, supplied to keep the motor cool, also is employed to control chip flow, moving the chips away from the cutter and the operator. A fence can be tilted for an angle planing to 45 deg. in one direction and 25 deg. in the other. Adjustment can be made to locate the cut in relation to the rear shoe and also for required depth. The motor rates ½ hp. and is designed for operation on 110-volt ac. or dc.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

▼ BREVITY—Identify by IEN - 9331 if you write the maker ▼

BARNES "SKIP TOOTH"

FOR HIGH SPEED CUTTING OF SOFT NON-FERROUS METALS • PLASTICS • FIBRES • WOOD • RUBBER

SKIP TOOTH IS A HARD EDGE FLEXIBLE BACK BLADE

The teeth of Barnes "SKIP TOOTH" are of special design and proportion in relation to the pitch or teeth per inch. The result is greater gullet capacity permitting fast cutting through heavy sections of non-ferrous metals with excellent chip clearance. Skip Tooth is recommended for plastics, rubber, wood, cork, etc. The hardened, widely spaced teeth cut freely and remain cooler at high speeds.

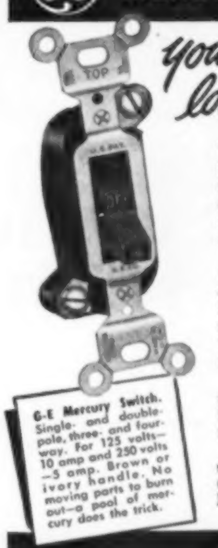
Ask Your Barnes Distributor for the new Barnes Band Saw folder

BARNES — ESTABLISHED 1919 — **W. O. BARNES CO., INC.**
1297 TERMINAL AVE. • DETROIT 14, MICH.

▼ BREVITY—Identify by IEN - 9332 if you write the maker ▼

MERCURY SWITCHES

your customers look for them



The next time you do a wiring job, recommend G-E mercury switches — national consumer advertising has created a strong public acceptance for these switches.

Prospective owners, architects, and builders of homes, offices, hospitals, and plants, like the silent, click-free feature of G-E mercury switches. They learn to appreciate their faithful service.

Recommend G-E mercury switches. Your customers have been conditioned to look for them.

Section D76-942, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

GENERAL ELECTRIC

▼ BREVITY—Identify by IEN - 9333 if you write the maker ▼

Improved Method Centrifugal SPRAY DRYER *and* CONCENTRATOR*

Complete information on improved centrifugal Spray Dryer, illustrated with photographs and engineering design drawings.

THE DRYING AND CONCENTRATING COMPANY DRYER

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooler and Sanitary Pumps with variable speed drives for handling the liquid material and controlling the moisture.

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

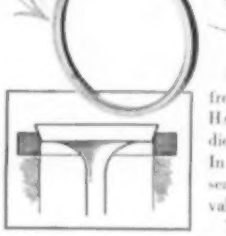
***CONCENTRATOR AVAILABLE SEPARATELY**

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining neutral flavors and vitamins. 363

DRYING and CONCENTRATING CO.
[illegible] SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

▼ BREVITY—Identify by IEN - 9334 if you write the maker ▼

Reduce Engine Maintenance With...
"HAYNES STELLITE" ALLOY
Trade-Mark
VALVE SEAT INSERTS



Over 170,000 miles of trouble-free service are usually given by HAYNES STELLITE alloy valve seats in diesel engines for buses and trucks. In gasoline engines, too, these alloy seats have phenomenal life between valve grinds.

The reason HAYNES STELLITE alloy valve seat inserts give such superior service is that they are made of a hard (Rockwell C51-54), cobalt-base alloy. The seats have excellent resistance to heat, corrosion, and erosion. They provide a tight valve fit long after ordinary seats have to be reground to prevent loss of power and waste of fuel.

For further information about HAYNES STELLITE alloy valve seat inserts and for prices, get in touch with our general offices in Kokomo, Indiana.

Haynes Stellite Company
A Division of Union Carbide and Carbon Corporation
UCC
General Offices and Plant, Kokomo, Indiana

"Haynes Stellite" is a trade-mark of Union Carbide and Carbon Corporation.

BREVITY—Identify by IEN - 9335 if you write the maker

Really New!

A FLEXIBLE MANOMETER

Just Roll It Up and Tuck It Away

No more cumbersome 2', 3', or 4' manometers to cart around. This new flexible Dwyer Manometer will fit into your pocket or the corner of your service kit. This revolutionary instrument is fabricated of tough, vinyl plastic that will serve for years. The plastic scale is firmly supported between the tubes. Standard ranges from 8 in. to 6 ft. of water or mercury. It is highly accurate, easy to read and convenient. Nothing like it for field work. Write for complete information.

F. W. Dwyer Mfg. Co.

307 S. WESTERN AVE. CHICAGO 12, ILL.

BREVITY—Identify by IEN - 9336 if you write the maker

Grinds cover rim in 5 seconds ...far faster than milling!

PORTER-CABLE

Abrasive Belt Machining

Previously, aluminum cover shown above was loaded in fixture, then faced on milling machine.

Now, rim is ground flat, by hand presentation, a Porter-Cable Model BG8 Abrasive Belt Machine. No fixture necessary. Surfacing time, including handling: 5 seconds.

Abrasive Belt Machining removes stock rapidly, provides fine finish free of tool marks. Greatly simplifies fixtures—or eliminates them entirely. Is often 10 times faster than milling, shaping or ordinary grinding—frequently saves 75 to 90% of former set-up time.

Wet-belt or dry-belt models (determined by material to be worked) available for flat surfacing, contour grinding, centerless grinding, generating radii, chamfering, beveling, burring and polishing.

Send for free booklet—shows how Abrasive Belt Machining reduces cost on many operations.

MODEL BG8-FT9 (with automatic feed table). For precision surfacing on repeat operations. 8" wide belt works entire areas at once. Quickest method on interrupted surfaces.

BG8-FT9

Abrasive Belt Machines for Every Application

Piston Grinders | Contour Grinders | Flexible Belt Grinders | Centerless Grinders | Bench Grinders | Contact Grinders

PORTER-CABLE MACHINE CO.
6009 N. Salina St., Syracuse, N. Y.

Please send me your booklet, "Abrasive Belt Machining."

Name
Firm Name
Address
City State

Mfgrs. of SPEEDMATIC and GUILD Electric Tools
In Canada write: Strongridge, Ltd., St. Catharines, Ont.

NEW LITERATURE—Continued

"Number of pages tells you the size"

PIPE FITTINGS . . "Wedge-Lock" coupling for company's light-wall pipe in low-pressure service; sizes. Bulletin 514, 4 pages. Naylor Pipe Co., 1228-32 E. 92nd St., Chicago 19, Ill. **IEN-01124**

PLASTIC MOLDING . . Service to mold a variety of plastics and products; illustrated examples. "Facilities Folder", 4 pages. Auburn Button Works, 51 Canoga Ave., Auburn, N. Y. **IEN-01125**

POLISHING . . Suggested method of grinding and polishing glass using company's abrasive belts. Booklet A-1B, 16 pages. Minnesota Mining & Mfg., 902 Fauquier, St. Paul 6, Minn. **IEN-01126**

PRESSES . . Open-back inclinable punch presses; catalog data on in tabular form on twelve models from 6 to 80 ton. Bulletin 1-9, 4 pages. L & J Press Corp., 51 Sterling Ave., Elkhart, Ind. **IEN-01127**

PRINTING . . Exposure cabinet for photo-offset duplicating plates to 20½ by 15½ in.; details. "Plastiphoter", 4 pages. Remington Rand Inc., 315 Fourth Ave., New York 10, N. Y. **IEN-01128**

PROCESSING . . Sifters, mills, dryers to produce granulated chemical products; sample flow sheets. Bulletin 06-B-7633, 8 pages. Allis-Chalmers Mfg. Co., 909 S. 70th St., Milwaukee 14, Wis. **IEN-01129**

PROCESSING . . Crushing, pulverizing, separating equipment, specials; illustrated review on a line. Bulletin 52, 8 pages. Bauer Bros. Co., 1705 Sheridan Ave., Springfield, Ohio **IEN-01130**

PUMPS . . Pneumatic units for light or viscous fluids; selection chart, materials handled, accessories, guns. Bulletin 700, 12 pages. Binks Mfg. Co., 3122 Carroll Ave., Chicago 12, Ill. **IEN-01131**

PUMPS . . Series-D hydraulic gear pumps and motors; sizes, performance curves. Catalog H-4, 60 pages. Commercial Shearing & Stamping Co., 1773-77 Logan Ave., Youngstown 1, Ohio **IEN-01132**

RECORD KEEPING . . "Flex-I-File" rotating record-card holder; description, examples of use. Folder 51-11, 4 pages. Air Center Inc., 51 New Castle Road, Youngstown 8, Ohio **IEN-01133**

RECORD KEEPING . . Fireproof insulated steel cabinets for drawings; sizes, properties. Folder SC-688, 6 pages. Remington Rand Inc., 315 Fourth Ave., Rm. 1618, New York 10, N. Y. **IEN-01134**

REFRACTORIES . . Castable and bonding cements, insulation; properties, installation. Catalog, 40 pages. Refractory & Insulation Corp., 120 Wall St., 10th Floor, New York 5, N. Y. **IEN-01135**

RESISTORS . . Sealed precision units to use as voltmeter multipliers; types, dimensions, ratings. Bulletin D-2, 2 pages. International Resistance Co., 407 N. Broad St., Philadelphia 8, Pa. **IEN-01136**

ROOFS . . Illustrated steps in renewing tar and gravel roofs including gravel removal. "Planned Maintenance U-526G", 4 pages. Tremco Mfg. Co., 8703 Kinsman Road, Cleveland 4, Ohio. **IEN-01137**

SCAFFOLDS . . Sectional steel or aluminum locking scaffolds; basic units, typical assemblies. "Adjustomatic", 12 pages. Automatic Devices Inc., St. Louis 12, Mo. **IEN-01138**

SEALING . . Ring-type packing; service recommendations on five types, photoelastic stress diagrams. "Vee-Flex Rings", 4 pages. Raybestos-Manhattan Inc., 47 Thomas St., Manheim, Pa. **IEN-01139**

SEPARATING . . Rotary magnetic unit to remove metal particles from coolant, cutting oil; operation. "Magnetic Filter", 4 pages. Honan-Crane Corp., Lebanon, Ind. **IEN-01140**

SIGNALING . . Smoke and combustion indicator units, also furnace indictors; drawings, descriptions. Bulletin 5101, 4 pages. Ess Instrument Co., 94-98 S. Washington Ave., Bergenfield, N. J. **IEN-01141**

SIGNALING . . Explosion-proof bells for 12 to 220 volts; design, models. Bulletin EP1, 4 pages. Signal Engineering & Mfg. Co., 154 W. 14th St., 11th Flr., New York 11, N. Y. **IEN-01142**

STAMPINGS . . Made with the company's temporary and semi-permanent tooling; description, examples. "Speedtooling", 4 pages. W L S Stamping Co., 3290-94 E. 80th St., Cleveland 4, Ohio **IEN-01143**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 9338 if you write the maker

A PAID NEWS ADVERTISEMENT BY REMINGTON RAND, INC.

PRACTICAL PRODUCTION CONTROL

that highlights the causes of delay

In a 31-page illustrated booklet, Remington Rand shows clearly the practical advantages of the graphic, flexible system called SCHED-U-GRAPH. The system got results for many harassed production men in World War II – is helping them again today, on all types of production scheduling and machine load problems.

SCHED-U-GRAPH is a large board with clearly visible signals which *show* the production man, graphically, how close each job is to schedule – *in time to take action if action is needed.* It links production quotas to inventory control in practical fashion, so that each component part is completed on schedule.

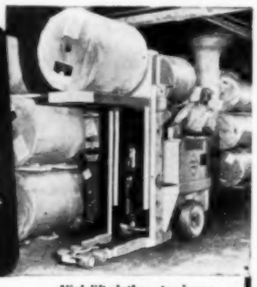
Whether you are working on CMP products, non-CMP products – or both – you need as never before the results which SCHED-U-GRAPH is now producing for plants of every kind.

For your free copy of booklet KD-341, write direct to the publisher – Remington Rand, Room 1370, 315 Fourth Ave., New York 10 – or use the Reader Service Form.

REMINGTON RAND INC.
Management Controls Library, Room 1370,
315 Fourth Ave., New York 10, N. Y.

BREVITY—Identify by IEN - 9339 if you write the maker

25% More Production with ELWELL-PARKER *Trucks!*



High lift platform truck especially suited for side loading in narrow aisles.

Handling 2300-lb. paper rolls and other printing supplies, this publisher gained three benefits with E-P trucks: 1st Mechanized handling has freed 3 men for other duties and upped production one quarter. 2nd Elwell-Parkers tier rolls up to 4 high—2 were the limit when done manually. 3rd Hazardous lifting has been eliminated. Also, damage to paper is minimized.

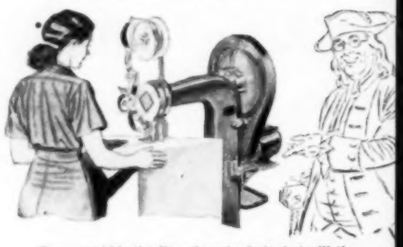
FREE BULLETIN *describes notable savings by E-P trucks. Write for copy of "Industrial Logistics", and name your product.*

THE ELWELL-PARKER ELECTRIC COMPANY
4063 St. Clair Avenue • Cleveland 3, Ohio

BREVITY—Identify by IEN - 9340 if you write the maker

"Want of care does us more damage than want of knowledge."

—Ben Franklin's Almanac, 1757



Thee can hide the fire of waste, but what will thee do with the smoke when ye Boss casts an eye on your department report?

—Acme Steel Notebook, 1951

How's *your* business? New people arriving, willing but perhaps untried? Old hands coming back and finding skills a little rusty?

Now's the time to get them off on the right foot toward increased efficiency and greater thrift. There's no better place to begin than in your packing and shipping operations. Take box stitching equipment for example. Here are five things everybody ought to know to keep Acme Silverstitchers on the job:

1. Clean and oil every day.
2. Never operate stitcher without material in stitching position.
3. For perfect stitching, check work regularly. If in doubt about any operating difficulty, refer to service manual (additional copies sent upon request) or submit stitched material, identified by machine type and serial number, to Customer Service Department, Acme Steel Company.
4. From time to time moving parts need replacement—keep a supply on hand to make quick minor replacements.
5. Ask us about the Acme Steel "3-WAY SERVICE PLAN" for equipment repairs.

Follow these suggestions. And ask your Acme Steel representative to work with you on ways to increase efficiency, eliminate waste and stretch the available supply of Acme Silverstitch box stitching wire. Or write Dept. IEN-91.

ACME STEEL COMPANY
2840 Archer Avenue, Chicago 8, Illinois

Steel Strapping — Barbed Straps
Stitching Machines & Wire—Hoops
Corrugated Fasteners—Strip Steel

ACME STEEL

BREVITY—Identify by IEN - 9342 if you write the maker

Mathews Chain Conveyers

"ENGINEERED TO SERVE PRODUCTION"

● One of the many widely applied types of conveying equipment designed and built by Mathews Conveyer Company.

The complete line of Mathews designed—Mathews built Conveyers includes the following:

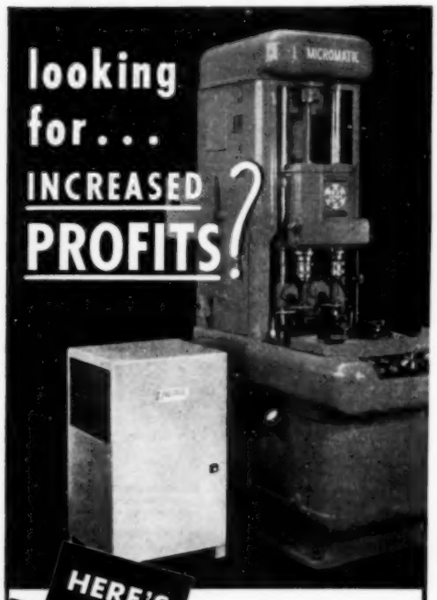
ROLLER CONVEYERS • LIVE ROLLER CONVEYERS • BELT CONVEYERS
WHEEL CONVEYERS • ELEVATING CONVEYERS • TROLLEY CONVEYERS
ROLLER SPIRAL CONVEYERS • PORTABLE CONVEYERS
SPECIAL CONVEYING MACHINERY

MATHEWS CONVEYERS

GENERAL OFFICES
Mathews Conveyer Company . . Ellwood City, Pennsylvania
PACIFIC COAST DIVISION
Mathews Conveyer Company West Coast . San Carlos, Calif.
CANADIAN DIVISION
Mathews Conveyer Company, Ltd. . . . Port Hope, Ontario

Engineering Offices or Sales Agencies in Principal American and Canadian Cities

BREVITY—Identify by IEN - 9343 if you write the maker



looking for . . . INCREASED PROFITS?

HERE'S HOW

- CLOSER WORKING TOLERANCES
- IMPROVED SURFACE FINISHES
- INCREASED RATE OF PRODUCTION
- REDUCTION IN NUMBER OF REJECTS
- LONGER TOOL LIFE WITH LESS TOOL MAINTENANCE

Think of it! Now you can INCREASE PROFITS and at the same time CUT COSTS through FROSTRODE COOLANT COOLERS.

If you are interested in INCREASED PROFITS merely write to the Engineering Department of Frostrode and technical information will be sent to you.

If you are having troubles in your production due to coolant difficulties Frostrode will be happy to send a factory trained engineer out to help you solve your coolant problems.

Frostrode units can be built to J.I.C. specifications.

FROSTRODE COOLANT COOLERS

Division of: VIKING PRODUCTS VICKSBURG, MICHIGAN

"FOR HIGHER PRODUCTION PROFITS . . . FROSTRODE COOLANT COOLERS"

BREVITY—Identify by IEN - 9345 if you write the maker

PROTECTING . . Work uniforms made to order for women workers

Source: ANGELICA UNIFORM CO.
1425-29 Olive St., St. Louis 3, Mo.

Plantswear trade names a new line of tailored uniforms available to individual plant specification. The company is prepared to supply a variety of styles including one-piece coveralls and slacks and shirt sets to provide good appearance and comfort for the user combined with durability and resistance to fading or shrinkage. The fabrics are vat dyed and Sanforized.

BREVITY—Identify by IEN - 9346 if you write the maker

METAL TREATING . . Coloring process to produce a blue black surface finish

Source: MITCHELL-BRADFORD CHEMICAL CO.
2444-48 Main St., Stratford, Conn.

Detail information in Bulletin MB-3

Type A designates a new formula for the company's Black Magic blackening salt that is employed in solution at 290 deg. to produce a blue-black iron-oxide finish on iron and steel surfaces. The new formula operates at a lower temperature than the material previously described IEN-4891-41. The salt provides a self-rectifying action that combats tendency to build up red iron oxide in the operating solution.

Work to be colored can be strung on wires, placed in baskets, hung on racks for initial immersion into a hot-alkali cleaner for about five minutes. This is followed by hot-water rinse prior to immersing in the Black Magic solution until the color is obtained. The colored work is then rinsed in clean water and is immersed in an oil or wax finish.

BREVITY—Identify by IEN - 9347 if you write the maker

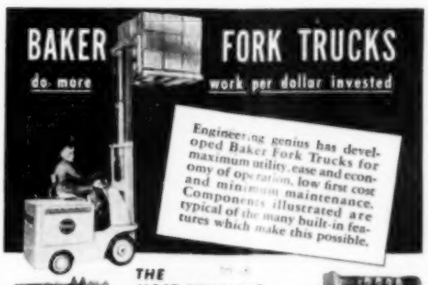
CUTTING . . Sheet metal snips carry forged chrome-vanadium jaws

Source: BONNEY FORGE & TOOL WORKS
51 Tilghman St., Allentown, Pa.

Overall length is 9¾ in. with jaw lengths at 2½ in. in this new sheet-metal snip. It has been designed to cut stainless steel, duralumin as well as the usual sheet metals. It is made for right-hand, left-hand or universal action. The jaws are serrated to grip the work. The handles operate with a compound leverage.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9348 if you write the maker



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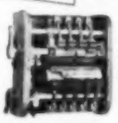
do more — work per dollar invested

Engineering genius has developed Baker Fork Trucks for maximum utility, ease and economy of operation, low first cost and minimum maintenance. Components illustrated are typical of the many built-in features which make this possible.

THE MOST EFFICIENT MOTORS FOR INDUSTRIAL TRUCKS



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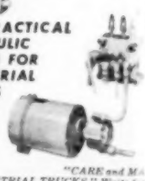

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1226 West 80th Street, Cleveland 2, Ohio

Baker INDUSTRIAL TRUCKS

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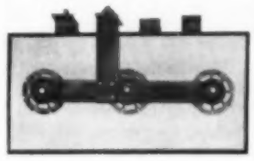

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1" sq. to 12" x 16" cells — in stacks, or single cells for customer assembly.

Made by a new process to a uniform, high quality, for continuous heavy-duty service.

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SYNTRON CO.
410 Lexington, Homer City, Pa.

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This free, 140-page booklet (FORM 167) shows you how to sharpen and recondition cemented carbide tools with a minimum expenditure of your valuable diamond wheels.

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Making better products to make other products better

BREVITY—Identify by IEN - 9351 if you write the maker

Less Walking—More Footage

Cut down waste welding time—increase footage up to 50%.

Use Worthington-Ransome Welding Positioners to tilt or turn the work—without delay.

No more walking around and climbing over the work piece, no more propping and flopping it. It's always in position for continuous downhand welding.

Welding Positioners: 100 lb to 30 tons capacity. Also Turning Rolls: 3 to 150 tons capacity, stationary or self-propelled.

Write for additional information to Worthington Pump and Machinery Corporation, Welding and Assembly Positioning Equipment Division, Dunellen, New Jersey.

WORTHINGTON

V.1.4

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2 of many types, functionally designed for working hands:

Multi-ply coating of NEOX—reinforced neoprene, extremely resistant to cutting, abrasion and chemicals. Fabric lining prevents snags, absorbs sweat, insulates, makes gloves easy on and off. Firm non-slip grip.

Natural rubber treaded palm and thumb. Has firm grip, wet or dry; wears like a tire.

We have the case records of hundreds of on-the-job tests, handling sharp, abrasive and slippery materials, with and without the presence of heat, oils, greases, acids, caustics, solvents and degreasants—where proper selection of work gloves has resulted in:

1: Fewer lost-time accidents
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5: And 40% to 70% savings in usual glove costs.

There's a correct glove for every job. Smart management makes it available.

Edmont Edmont Manufacturing Company 1226 Walnut Street, Coshocton, Ohio

World's largest maker of coated industrial gloves

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PULVERIZES and REMOVES GRIME from floors *in 1 operation!*

Powerful, easy to use! Cuts loose tough, incrusted grime and picks it up (8 to 20 lbs. per min. average) leaves floor clean, smooth and dry.

TENNANT INDUSTRIAL FLOOR MACHINE

- Eliminates hand scraping, chemicals, soap, water.
- Cuts cleaning costs, is many times faster than other methods . . . does a better job.
- Ideal for ALL types of grime—tar, grease, metal cuttings, paint, etc.
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RUGGED Tennant Floor Machines for 12" or 16" drum accessories. Motors up to 6 h.p. (gas) or 5 h.p. (elec.) REVO-tool at right has hundreds of alloy steel cutters for heavy duty cleaning.

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STAPLING . . "Duo-Fast" pneumatic stapling tools; description, review of models and staples, special jaws. Folder FT-16, 4 pages. Fastener Corp., 866 Fletcher St., Chicago 14, Ill. IEN-01144

SWITCHES . . Side-mounting float switch with float in the tank; drawings, data on two models. Catalog Section V, 4 pages. Magnetrol Inc., 2108-12 S. Marshall Blvd., Chicago 23, Ill. IEN-01145

TESTING . . Type-P SR-4 strain-gage load cell, 5 to 50 ton; schematic, specifications. Bulletin 325, 2 pages. Baldwin-Lima-Hamilton Corp., Paschall P. O., Philadelphia 42, Pa. IEN-01146

TESTING . . Portable glossmeter and reflectometer for surfaces and finishes; details on use. "Improved Glossmeter", 8 pages. Henry A. Gardner Lab., 4725 Elm St., Bethesda 14, Md. IEN-01147

TESTING . . Binocular metallograph with 35-mm. recording camera; optical data, examples. "OPL Metallograph", 4 pages. F. T. Griswold Mfg. Co., 303-7 W. Lancaster Ave., Wayne, Pa. IEN-01148

TESTING . . "Glennite" accelerometer to measure high-frequency shock and vibration; characteristics. Bulletin A-403, 4 pages. Gulton Mfg. Co., 210-14 Durham Ave., Metuchen, N. J. IEN-01149

TESTING . . Instruments to test electronic tubes; models, notes on theory, circuits. Bulletin TTC, 16 pages. Hickok Electrical Instrument Co., 10544-48 Dupont Ave., Cleveland 8, Ohio IEN-01150

TESTING . . "Dynograph" oscillograph and chopper-type amplifier to record six variables. Bulletin L-311, 8 pages. Offner Electronics Inc., 5318-22 N. Kedzie Ave., Chicago 25, Ill. IEN-01151

TESTING . . Microwave signal source, spectrum analyzer, others; specifications. "Electronic Equipment", 12 sheets. Polarad Electronics Corp., 102 Metropolitan Ave., Brooklyn 11, N. Y. IEN-01152

TESTING . . Direct-writing recorders and instrument amplifiers; specifications, list prices. Industrial Catalog, 26 pages. Sanborn Co., 39 Osborn St., Cambridge 39, Mass. IEN-01153

TRAPS . . Also valves and fittings for heating service; drawings and capacity data on some 20 products. Bulletin 1501, 46 pages. C. A. Dunham Co., 402 W. Madison St., Chicago 6, Ill. IEN-01154

TRAPS . . Steam trap with integral strainer, check valve, sight glass, temperature control; details. Bulletin, 16 pages. Velan Engineering Co., 3 Exchange Pl., Jersey City 2, N. J. IEN-01155

TRUCKS . . Engine-driven power lift truck, 800-lb. capacity; description, attachments, uses. Bulletin, "Xpediter", 12 pages. Young Iron Works, 2957-61 First Ave. S., Seattle 4, Wash. IEN-01156

TUBES . . Low-carbon alloy steel tube for mechanical use; analyses, properties, fabrication. Folder TDC-149, 4 pages. Babcock & Wilcox Tube Co., 4027-31 Fourth Ave., Beaver Falls, Pa. IEN-01157

TUBES . . "Thermek" integral-spine finned tube, ⅝ to 1¼ in.; properties, illustrated applications by function. Bulletin 551, 4 pages. Heatron Inc., 331-35 Eberts Lane, York, Pa. IEN-01158

VENTILATING . . Roof ventilators; data summaries on continuous-ridge, gravity, fan-equipped units. Bulletin SPV-101-D, 12 pages. Burt Mfg. Co., 929-33 S. High St., Akron 11, Ohio IEN-01159

VENTILATING . . Fans and blowers in a range of designs; sizes, ratings, shutters. Mailing piece, 24 pages. Standard Electric Mfg. Co., 51 Haddon Ave., West Berlin, N. J. IEN-01160

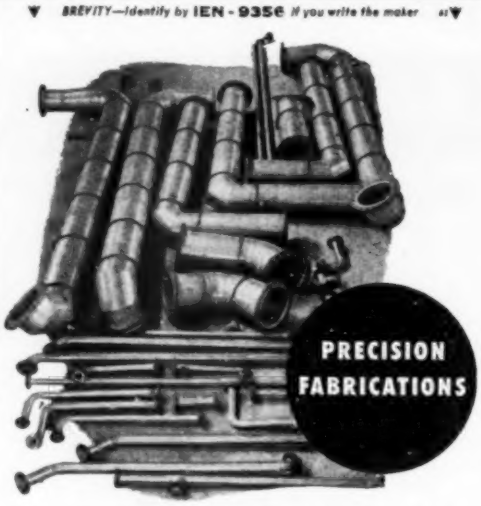
WAXES . . Properties and uses on 8 waxes including replacements for Carnauba and Japan wax. Looseleaf Catalog, 11 sheets. Concord Chemical Co., 78-82 E. 2nd St., Moorestown, N. J. IEN-01161

WEIGHING . . Bench, platform, counting, printing, special weighing scales; specifications, uses. Looseleaf catalog, 44 pages. Toledo Scale Co., 51 Telegraph Road, Toledo 12, Ohio IEN-01162

WOOD WORKING . . Shapers, jointers, saws, drill presses, sanders; lathes; machine specifications, accessories. Catalog 51, 56 pages. Boice-Crane Co., 926 Central Ave., Toledo 6, Ohio IEN-01163

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 9356 if you write the maker ▼



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Send specifications for quotation.

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THE ONLY 100% MERCURY SWITCH EQUIPPED CONTROLS

The distinguishing feature of Mercoid Controls is the exclusive use of Mercoid hermetically sealed mercury switches. These switches are not subject to dust, dirt or corrosion, thereby assuring better performance and longer control life. The items shown below are but a few miscellaneous items. See Catalog No. 700 for the complete line.

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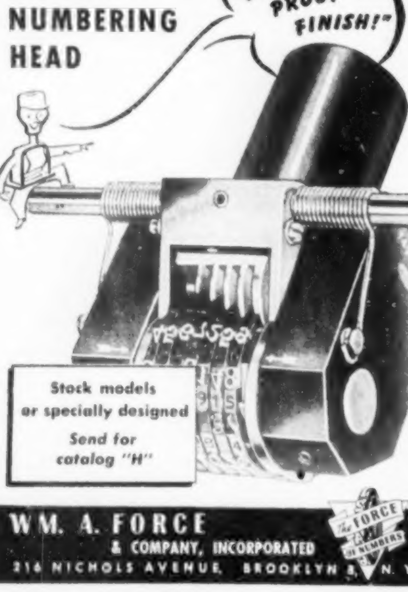

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FAST... POSITIVE IDENTIFICATION

For a few cents per pipe, you can equip your entire plant with Brady QUIK-LABEL Pipe Markers. You can get a uniform system of pipe identification based on A.S.A. Standard A13. Names of materials printed in large black letters on correct A.S.A. background colors — no hand stenciling, painting, or hard to remember codes. Anyone who can read can tell at a glance the pipe contents and direction of flow. Over 235 different markers and direction arrows in stock. Specials made to order.

Brady QUIK-LABELS stick without moistening—applied in a jiffy. Silicone Plastic treated to resist dirt, grime, moisture—for indoor or outdoor service.

Brady Pipe Markers leave no room for doubt . . . or TRAGEDY.

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CAST SPECIAL SHAPES QUICKLY . . . EASILY

. . . *with these* FIRECRETE Castable Refractories

Special shapes or linings of Firecrete air-harden and are ready for service within 24 hours. Other advantages—no drying shrinkage, negligible firing shrinkage, high resistance to spalling, can be used in combination.

3X Firecrete—Effectively withstands soaking temperature to a full 3000 F. Provides savings through longer life and reduced shutdowns.

H-T Firecrete—A high heat-duty refractory made from an exceptionally heat-resistant base. For service between 2400 F. and 2800 F.

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For patching and gunning, use 3X BLAZECRETE. Has exceptional adherence qualities, can be flipped into place with a trowel without ramming or tamping. For use to 3000 F. For further information, write to Johns-Manville, Box 290, New York 16, N. Y.

Johns-Manville FIRECRETE "The Standard in Castables"

BREVITY—Identify by IEN - 9359 if you write the maker

Lined with pure Tungsten Carbide (BORIUM).
Outlasts 300 ordinary cast iron nozzles.
Holds orifice size.
Retains high velocity, cleaning ability.
Saves compressed air.
Resists cutouts.
Eliminates frequent changes.

Guaranteed 300 HOURS when cleaning with sand, most common abrasives.

Standard screw and flange types. Special types made to order. Send blueprint and write for folder.

STOODY COMPANY
11930 East Slauson Avenue, Whittier, California

BREVITY—Identify by IEN - 9360 if you write the maker

WESTON *Readable* ALL-METAL THERMOMETERS

AVAILABLE IN THESE **3** TYPES

STANDARD INDUSTRIAL THERMOMETERS

All-metal dial types with stainless steel stems, in straight and angle forms. Scale lengths 3"–6" and 9", with stems from 2½" to 72". Available as testing thermometers, and for general purpose and heavy duty service. Ranges from −190 to +1000°F. All-metal construction prevents breakage, assures dependable accuracy for longer periods.

CONTACT MAKING THERMOMETERS

Combines the features of the all-metal indicating thermometer with an alarm or control device. Has adjustable contact arm mounted in the glass and bezel. Supplied to make contact on increasing or decreasing temperatures. Has positive magnetic type contacts. Contact rating . . . 100 ma at 110 volts a-c; 50 ma at 110 volts d-c. Stem lengths 2½" to 24".

MAX-MIN® THERMOMETERS

Equipped with a manually set red index which moves up or down scale with pointer, remaining at extreme temperature reached until reset. Thus one reading gives present temperature, and maximum or minimum reached since last reading. Available in scale lengths of 6" and 9"—stem lengths 2½" to 24".

Literature describing Weston all-metal, as well as electrical and glass thermometers, sent on request. WESTON Electrical Instrument Corporation, 603 Frelinghuysen Avenue, Newark 5, New Jersey . . . manufacturers of Weston and TAGliabue instruments.

WESTON *Instruments*

BREVITY—Identify by IEN - 9362 if you write the maker

PAINTING . . Spray gun machine paints work positioned in mask frames

Source: SEPANSKI & ASSOCIATES
416 Henry Ave. S. E., Grand Rapids 6, Mich.

New design of the company's painting machine, previously described IEN-9739-50, presents two openings for work application in the table top as compared to the single opening in the original design. The new machine can be supplied in three sizes providing openings measuring 12, 18 and 24 in. in length by 6 in. in width. Overall dimensions are 66, 84 and 102 in. in length by 18 in. in width by 42 in. in height.

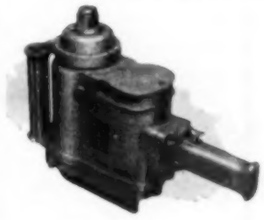
Two spray guns are mounted with universal adjustment on the piston of a horizontal pneumatic cylinder inside the housing. The cylinder is controlled by timing equipment to traverse to the left and back to the right again beneath the openings toward which the guns are faced. Paint masks for given work are positioned in the two openings.

The operator places work in these masks and removes it. Two men can be employed to operate the machine or one man can operate it progressively. Length of stroke and the operating speed can both be controlled in each direction of the spray-gun movement. Installation connections are to an exhaust duct, an air line and the paint supply.

BREVITY—Identify by IEN - 9363 if you write the maker

WRENCH . . Electric impact tool with threaded fastenings to 1¼ inch

Source: INGERSOLL-RAND CO.
11 Broadway, Dept. F. P., New York 4, N. Y.

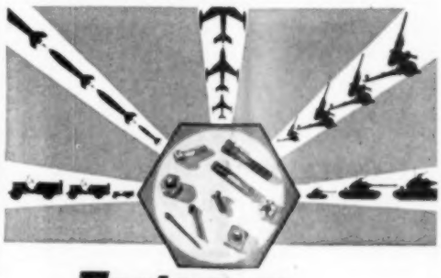


Size 34U is a new assembly in the company's Impactool line. It employs side-by-side construction of a universal electric motor and the impact mechanism which converts the electric drive into a rapid succession of light rotary impacts at the 1-in. square driving head. The blows are sufficiently powerful, cumulatively, to break loose the tightest fit in the capacity of the tool. At the same time they are individually light enough to be absorbed by the mass of the tool so there is no appreciable backward twist on the operator's hands.

Overall dimensions are about 10¼ in. measured along the spindle, 4¾ in. in width and about 14 in. in length without the adjustable grip handle which can be attached in several positions or removed entirely. The handle containing the trigger switch also can be rotated through 180 degrees. Weight is 32½ pounds. Equipment includes a cable and plug and a metal-edge carrying box.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 9364 if you write the maker



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. . . for our "First Lines" of Defense!

Before the men of our Army, Navy and Air Forces can go into action, the Production Lines of the country must supply the "tools" for the job.

Lamson & Sessions manufactures fasteners which play a vital part in keeping these "first lines" rolling. For practically every finished product requires bolts, nuts, screws, cotters, etc. In fact, over 2% OF THE STEEL PRODUCED IS USED TO FASTEN THE REST TOGETHER.

You who run the production "first lines of defense" are welcome to consult Lamson anytime on fastener problems.

The home of "quality controlled" fasteners — *Lamson & Sessions*

The LAMSON & SESSIONS Co. . General Offices: 1971 West 85th Street • Cleveland 2, Ohio
Plants at Cleveland and Kent, Ohio • Birmingham • Chicago

BREVITY—Identify by IEN - 9365 if you write the maker

THE *Universal* FLEXIBLE METAL HOSE

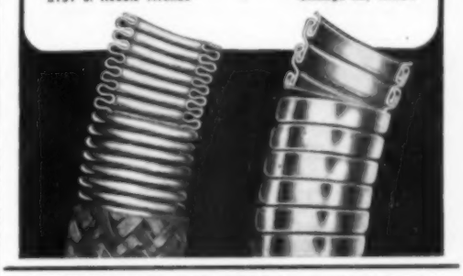
- *In All Available, Workable Metals*
- *In Sizes From ⅛" to 30" Diameters*

STANDARD
We offer you a wide selection of flexible metal hose for conveyance of gases, liquids, semi-solids, dust, etc. — for moisture-proof armored conduit and control casings — and many other applications.

SPECIALS
Our engineering department will offer detailed recommendations on any special problems without obligation to you.

Write for UNIVERSAL METAL HOSE Catalog U-101

UNIVERSAL METAL HOSE CO.
2131 S. Kedzie Avenue • Chicago 23, Illinois



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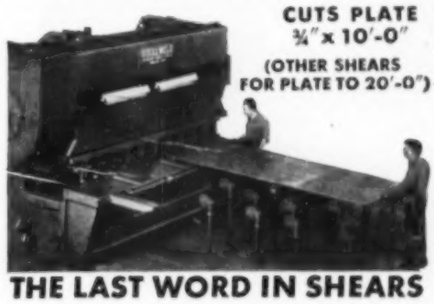


CUTS PLATE ¾" x 10'-0"
(OTHER SHEARS FOR PLATE TO 20'-0")

THE LAST WORD IN SHEARS

No other shear is like Steelweld. No other shear has its many features. It is the last word in metal-cutting machines.

Consider: (1) Fatigue-reducing electric foot control; (2) Fast, easy Micro-Set Knife adjustment which enables smooth accurate cutting of all thickness metals; (3) Convenient front-adjusting back gauge; (4) Trouble-free mechanical hold-downs; (5) All-welded, rigid one-piece steel frame; . . . and many more advantages that make operation easy and assure top performance.

Built for all thickness metals to one inch and lengths to 20'-0".

STEELWELD Proven Blade SHEARS CATALOG No. 2011

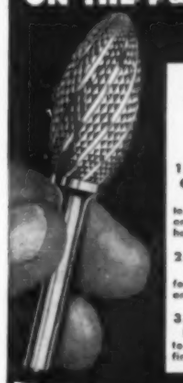
Send for free copy of catalog No. 2011.

THE CLEVELAND CRANE & ENGINEERING CO.
4232 East 282nd St., Wickliffe, Ohio

STEELWELD SHEARS

BREVITY—Identify by IEN - 9367 if you write the maker

6 IMPORTANT REASONS FOR STANDARDIZING ON THE P&W KELLERFLEX *Carbide*



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1. MASTER GROUND BY MACHINE to give uniform flutes and teeth of even height.
2. EXCLUSIVE DEEP FLUTING for free clip clearance.
3. RUNS AT ½ USUAL SPEEDS to produce finer finishes.
4. NO SHARP SLIVERS — instead, harmless granules, easy on the hands.
5. EASILY CONTROLLED — won't "walk" away from work.
6. MUCH MORE PROFITABLE because less wear and tear on operator, and on machine.

Made in over 50 shapes and sizes. Order from your nearby P&W Branch Office:
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(The Stance Co.) • Detroit • Houston
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Pittsburgh • Rochester • St. Louis
San Francisco • and from Factory Stock at West Hartford, Conn. *Office Only

PRATT & WHITNEY
Division Niles-Bement-Pond Company
West Hartford 1, Connecticut

BREVITY—Identify by IEN - 9368 if you write the maker

New-REMINGTON STUD DRIVER

MODEL 450

Cartridge-powered tool fastens steel or wood to concrete or steel in seconds!

Sets studs as fast as 5 min.—up to 100 times faster than usual methods for hanging steel sash to concrete, setting steel or wood structurals on concrete, attaching conduit and boxes to masonry and steel surfaces, etc.

Just 12 seconds to load and fire! Safety shield, cocking indicator, safety button make it *extra*-safe. Sets wide variety of studs—5 selective power loads.

No wires or outside power source. Weighs 5½ lbs. Rugged, dependable, stands hard handling and use. Costs only $119.50. Write today for more details, name of nearest distributor. Remington Arms Company, Inc., Industrial Tool Division, 931 Barnum Avenue, Bridgeport 2, Connecticut.

Remington DU PONT

BREVITY—Identify by IEN - 9369 if you write the maker

You can install Williams-Hager flanged Silent Check Valves in your water system in any position . . . horizontal, angular, vertical with flow upward or downward . . . and put an end to costly and annoying water hammer. Easy to install or re-seat without special tools, they are durable and compact with easy accessibility and low friction. Available in standard pipe sizes from 1" to 20". Investigate the many features of these valves . . . and save!

THE WILLIAMS GAUGE CO.

CHECK VALVES

Pump Valves . . . Water Gauges . . . Gauge Cocks . . . Steam Traps . . . Pump Governors . . . Feed Water Regulators . . . Water Columns

Write today for Bulletin WH-100.

2900 PENNSYLVANIA AVE. • PITTSBURGH 33, PA.

BREVITY—Identify by IEN - 9370 if you write the maker

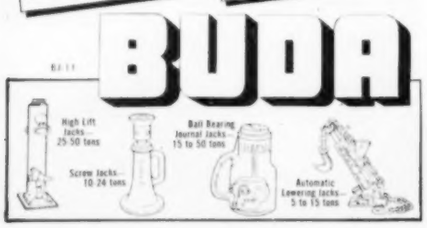
BUDA HYDRAULIC "TWO-SPEED" JACKS

✓ SIMPLE ✓ SAFE ✓ DEPENDABLE

Precision control in raising or lowering any load—two lifting speeds—rugged design—simple hydraulic operation are features of BUDA Hydraulic Lifting Jacks. Write for Bulletin and complete details on Buda Lifting Jacks.

The Buda Company, Harvey, Illinois

BUDA



BREVITY—Identify by IEN - 9371 if you write the maker

INCINERATOR . . For plant refuse, oil or gas fired, is safe to leave

Source: WINNEN INCINERATOR CO.
930-34 Broadway, Bedford, Ohio

The company announces further development of its incinerator by making it available with oil burners in place of the gas burners previously described IEN-8365-51. Standard North American air-operated oil torches, Series 180, are employed for connection to an oil supply line and a shop air-pressure line. Maximum consumption of oil is 4 gph. and of air is 1.25 cfm.

Wet or dry refuse, trash, garbage are completely consumed when they are dumped into an opening at the top of the housing. Capacity is about 400 lb. of refuse per hr. containing 50 percent moisture. Combustion chambers measure 33 by 33 by 40 inches. Grate area measures 32½ by 32½ inches. Base dimensions are 36½ by 36½ in. for the improved incinerator.

BREVITY—Identify by IEN - 9372 if you write the maker

INSULATING . . Adhesive tape has dielectric strength of 8,000 volts

Source: B. F. GOODRICH CO.
448-52 S. Main St., Akron 11, Ohio

Packaged in a metal container

Koroseal is the material employed in a new insulating tape packaged in rolls containing 60 ft. measuring ¾ in. in width by 0.007 in. in thickness. The tape is waterproof, flame-proof, resistant to abrasion and attack by acids, oils alkalis and corrosive salts. The adhesive is non-transferring and can be pressed onto a dry surface any number of times without losing its stickiness. It adheres securely to itself and to wire insulation.

BREVITY—Identify by IEN - 9373 if you write the maker

VISE . . Secures wire rope for splicing, rates ⅜ to 1½ inches

Source: BIG FOUR MACHINE & SUPPLY CO.
1013-A Hales Bldg., Oklahoma City 2, Okla.

The company announces take-over of manufacture and sale of the wire-rope splicing vise, previously described IEN-3626-44. The vise holds a wire rope on the sides and rear to form it against a thimble and secure it while the open end is being spliced in. The assembly weighs 115 lb., measures 17½ in. in width. The side jaws open to 10½ inches. Riggers' Forming Vise is the designation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9374 if you write the maker

JOY WL-80 "UNITAIR"

the Compressor of 1000 uses

81 to 640 CFM

- ★ A size for *every* standard motor rating
- ★ Air cooled . . . Two stage
- ★ Force-feed lubrication
- ★ Small floor-space requirements

Write for this FREE HELP!

New 16-page Bulletin A-56—has complete details and a Selector Chart to help you choose the right compressor for your needs.

Consult a Joy Engineer

W&D 13087

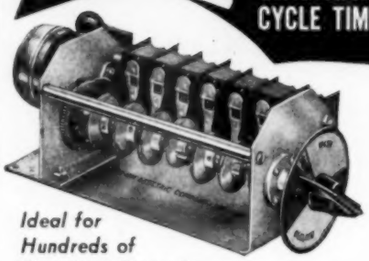
JOY MANUFACTURING CO.

General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.

IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
SARNIA, ONTARIO

BREVITY—Identify by IEN - 9375 if you write the maker

For Immediate Delivery.... The NEW ZENITH Multi-Circuit CYCLE TIMER



Ideal for Hundreds of Electrical Operations

Specially designed to accurately time any operation—for electrical display signs, industrial furnaces, electrical appliances, laundry equipment and dry cleaning machinery. The Multi-Circuit Cycle Timer and other Zenith units will also solve many laboratory timing problems. May be set for on and off periods with as many circuits as desired . . . can be furnished without synchronous motor for elevator control, limit switch and similar operations. Available now!

For information on volts, cycles and circuits as well as prices—send for illustrated Bulletin No. 142.

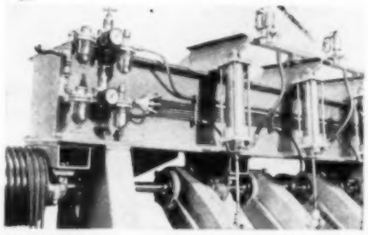
ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

BREVITY—Identify by IEN - 9376 if you write the maker

Norgren MICRO-FOG

LUBRICATES BEARINGS & DRIVES

on 24 ft. assembly of 13 saw ladders



RESULTS *after gruelling saw mill service**

1. Bearings in excellent condition
2. Chain drives and sprockets show no sign of excessive wear
3. NO ACCUMULATION OF OIL IN HOUSINGS

The PORTLAND OVERHEAD TRIMMER, product of Portland Iron Works, Portland, Ore., manifolds an oil-fog to 13 saw ladders over distances up to 24 feet.

The problem was to lubricate uniformly each saw ladder without leaving pools of oil in the housings. The Portland Iron Works experimented at length with various airline lubricators and found that Norgren Micro-Fog Lubricators assured faultless lubrication at all vital points.

** If you need closely controlled lubrication traveled over long distances to single or multiple air-actuated devices—CHECK ON THE NORGREN MICRO-FOG LUBRICATOR.*

For complete details, write for APPLICATION DATA SHEET No. 109 . . . C. A. Norgren Co., 232 Santa Fe Drive, Denver 9, Colo.

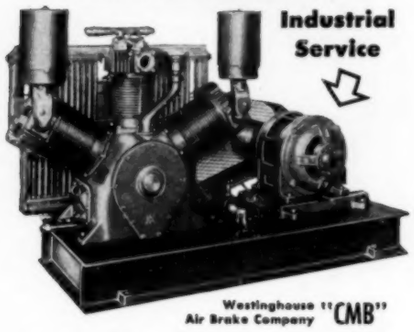
25th Year of Progress

Norgren

LUBRICATORS, REGULATORS, FILTERS, VALVES, HOSE ASSEMBLIES

BREVITY—Identify by IEN - 9378 if you write the maker

Here's a Husky "He-Man" AIR COMPRESSOR for Industrial Service



Westinghouse "CMB" Air Brake Company

Handles tough assignments—designed for continuous operation at 150-lb. max. Two low-pressure, one high-pressure cylinders, forced-feed lubrication system with "metered" oil flow. Automatic—may be arranged for "start and stop" or "continuous-running—load-unload" operation. Displacements 126 to 203 C.F.M., Motor HP 20 to 40. Catalog 9302-7; ask for it.

WESTINGHOUSE
AIR BRAKE COMPANY
WILMERDING, PENNA.
INDUSTRIAL PRODUCTS DIVISION

BREVITY—Identify by IEN - 9379 if you write the maker

HALF

Half of this message has to do with the drawing of steel, stainless steel, aluminum, brass with FLUID-FILM U-19 . . . it is non-corrosive to dies and metals . . . applied with rush, roll, dip, spray,—weld through it. FLUID-FILM, a non-pigmented, semi-emulsion compound performs the toughest job economically—a little of it goes a long way . . .

the other HALF

is concerned with the cleaning of stampings drawn with FLUID-FILM in pressure washing equipment with Northwest Metal Cleaner SC-9. It has been on the market for years and is thoroughly plant proven for all washing machine use regardless of application. SC-9 is still one of the lowest priced cleaners in spite of the alkali price increase . . .

metal cleaner SC-9

BREVITY—Identify by IEN - 9380 if you write the maker

When Choosing V-Belts Remember These Two Words ...They Mean Exactly What They Say!

"DEPENDABLE RUGGEDNESS" didn't get into the BWH trade mark by accident. It means *precisely* what it says . . . Bull Dog V-Belts assure steady, smooth, low cost power transmission—*uninterrupted by premature belt failure.* You save on maintenance costs, keep the wheels of power moving!

TOUGH PROBLEMS INVITED — Ask us or your nearest BWH distributor about your power transmission belting, conveyor belting and hose problems. We're specialists in making mechanical rubber products work *better, longer.*

Another Quality Product of

BOSTON WOVEN HOSE & RUBBER CO.

Distributors in all Principal Cities

PLANT: Cambridge, Mass. • P. O. Box 1071, Boston 3, Mass., U. S. A.

BREVITY—Identify by IEN - 9381 if you write the maker

TIMING . . Reset interval unit in 11 ranges from 15 sec. to 24 hours

Source: R. W. CRAMER Co.
49 Saybrook Ave., Centerbrook, Conn.

New differential is combined with a braking relay to act as the clutch that engages and disengages the synchronous motor in this recently improved design of the company's Type TEC and TER interval timers. The unit provides for an adjustable time delay between the operation of a control circuit and a subsequent closing or opening of a load circuit as in heat treating, control of plastic molding, lapping, induction heating, mixing, furnace purging.

The circuit contacts rate 10 amp. at 110-volt ac. The shortest time range of 15 sec. is marked off in ¼-sec. dial divisions and can be operated on a minimum interval of ¾ second. The 12-hr. unit carries 15-min. dial divisions and can be operated on a minimum 45-min. interval. Diameter of the faceplate on the assembly shown in the illustration is 3¾ inches.

Type TEC is controlled by an external sustained contact which is made to start the timing interval. At the end of the time delay as set up on the timer dial the load circuit is switched and the timer remains in this condition until the control contact is broken. Then the load circuit is restored to its initial position and the timer resets ready for a new cycle. This unit will reset on power failure and repeat, when power is restored, providing the external contact remains closed.

Type TER, equipped with a reverse-acting clutch, is used when the timing cycle must be initiated by a short electrical impulse of 0.1 sec. or more received from some machine or instrument. On receiving this impulse the timer resets, switches the load circuit and begins the timing cycle. At the end of the cycle the load circuit is again switched and the timer remains in this condition until a new starting pulse is received. This unit will suspend operation during a power failure and will continue on when power is restored.

The new drive consists of internal-toothed planetary gearing with the sun gear indirectly coupled to the motor and the planet gears connected to the output. When locked by the braking relay the internal gear causes the motor to drive the output shaft. When the braking relay is released the mechanism is also released and the timer resets to start position by action of the reset spring. On reverse-relay action the reset does not occur on power failure but does require momentary energizing.

BREVITY—Identify by IEN - 9382 if you write the maker

IDENTIFYING . . Plastic badge encloses worker photograph, description

Source: UNITED STATES CAM-O-GRAPH
Holmes & 18th Sts., Kansas City 8, Mo

Bulletin upon request

The company offers a new badge-manufacturing service in which it produces employee photographs from exposed film and laminates these photographs with data covering the employee inside two sheets of transparent plastic. Badges can be equipped with pins or supplied as cards. Camera equipment is available also with which the user can make the original photographs film particularly designed for this purpose.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9383 if you write the maker

THE MATEER ELECTRIC FILLER HANDLES THEM ALL!

LIQUIDS · OILS · POWDERS · PASTES

COMBINED LIQUIDS AND SOLIDS

1/500 oz. to 2 Pounds
20 to 70 Per Minute
Up to 750° F.

SAVE TIME AND MONEY WITH THE MATEER ALL ELECTRIC FILLING HEAD

Totally enclosed manual or automatic. Accuracy as close as ±½%. Synchronize this self contained filling head with existing production lines and processing systems.

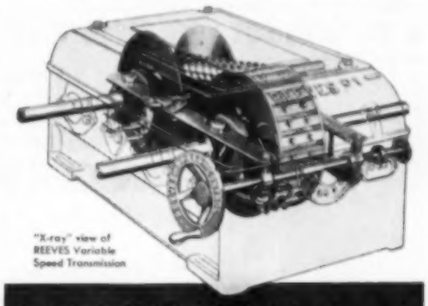
Jacketed and electrically heated hoppers available for handling cold or hot materials up to 750° F.

Hot waxes, insulating compounds and asphalts handled without difficulty.

Send full information and samples of material to be tested. Write Dept. 196 for fully illustrated bulletin.

G. DIEHL MATEER & CO.
Lincoln Highway • Devon, Pa.

BREVITY—Identify by IEN - 9384 if you write the maker



"X-ray" view of REEVES Variable Speed Transmission

REEVES Variable Speed Transmission

Provides positive, accurate speed changes—without stopping machine—to meet the requirements of every operation and operator, under every changing condition. Easily applied to machines in service—requires no special tools or training to maintain. Horizontal and vertical designs, open or enclosed—in sizes fractional to 87 hp; speed ratios 2:1 through 16:1; manual or automatic controls. Internal operating parts also available for easy incorporation within the framework of your machines. Get full details on the complete REEVES line. Write for free Catalog IN 71-G.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

BREVITY—Identify by IEN - 9385 if you write the maker

BEATS CORROSION AND DUST!

IN CHEMICAL, liquid fuel, milling, coal handling — any industry faced with corrosive vapors, combustible or dust laden atmospheres — Type 371 General Purpose Starters will give unfailing start-stop service, and complete protection! Wall-mounted design permits low original cost . . . space saving, economical installation. This starter is small enough to be located near the controlled motor.

Rolling-wiping contact action . . . low inertia moving parts . . . automatic reset temperature overload relays and other features add up to longer use without maintenance. Select Type 371 Motor Starters for 2300 volt squirrel-cage motors to 350 horsepower. Call your nearby A-C representative or write to Allis-Chalmers, Milwaukee 1, Wisconsin, for Bulletin 14B7274. A-3452

ALLIS-CHALMERS

BREVITY—Identify by IEN - 9386 if you write the maker

85,000 R.P.M.!

ARO GRINDERS for Modern Metal Alloys!

HIGH SPEED...with SAFETY!

ARO AIR TOOLS

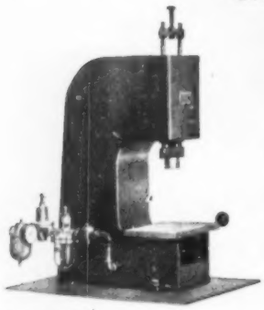
ARO's famous Turbine Grinder Model 7535 with Erickson precision collets . . . greater gripping power for *greater safety* at high grinding speeds. 1/64" to 1/4" sizes. Excellent for carbide burr work and small mounted points. Write for catalog.

Also . . . LUBRICATING EQUIPMENT . . . HYDRAULIC EQUIPMENT . . . AIRCRAFT PRODUCTS . . . GREASE FITTINGS

The Aro Equipment Corporation, Bryan, Ohio
Aro Equipment of Canada, Ltd., Toronto

BREVITY—Identify by IEN - 9387 if you write the maker

6 WAYS TO CUT "PER-PIECE" COST ON PUNCH PRESS WORK



1. INCREASED OUTPUT—up to 120 strokes per minute.
2. GREATER ACCURACY—pre-select ram pressure — pre-select ram stroke — for close tolerances.
3. PRE-SET RAM MOVEMENT — from slow squeezing action to fast punch press blows.
4. LOW OPERATING COST — Single acting air cylinder uses little air; low oil consumption.
5. WIDE WORK RANGE—Models ¾ to 10 tons pressure — up to 4" stroke.
6. CUTS OPERATOR FATIGUE — simple — Easy — Safe — Practical. Little physical effort. Either hand or foot operated.

Studebaker AIR-HYDRAULIC Gap Type Presses

All steel welded for longest life on stamping, riveting, assembling, forming, punching, cutting — all punch press jobs.

SEND FOR BULLETIN

Studebaker MACHINE COMPANY

1235 South 9th Avenue — Maywood, Illinois

BREVITY—Identify by IEN - 9388 if you write the maker

Even unskilled operators can speed cutting time with a WALKER-TURNER 16" BAND SAW

To meet today's demand for accurate and faster production, put the new Walker-Turner 16" Band Saw to work in your shop. Any operator, even unskilled labor, can quickly learn to handle these metal and woodworking machines. Built to simplify cutting operations, they're *fast, accurate, safe, easy to handle.*

The automatic Power Feed, a patented Walker-Turner feature, insures protection against overloading the blade—maintains a pre-set feeding pressure for sharper cutting—affords longer blade life.

Find out more about this practical way to increase output while reducing production costs.

Ask your distributor for full information about this and other Walker-Turner Power Tools for metal, plastic and woodworking operations. Or mail coupon today for complete catalog.

SOLD ONLY THROUGH AUTHORIZED DEALERS

DRILL PRESSES • JOINTERS
TABLE SAWS • BAND SAWS
BELT and DISC SURFACERS
JIG SAWS • RADIAL SAWS
LATHES • TILTING ARBOR SAWS

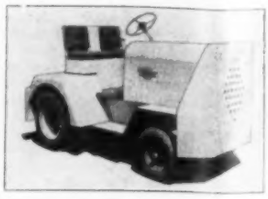
WALKER-TURNER
KEARNEY AND TRECKER CORPORATION
PLAINFIELD, N. J.

Walker-Turner Division, Kearney & Trecker Corp.
Dept. IE4, Plainfield, N. J.
Please send me the new Walker-Turner Machine Catalog.
Name .....
Title .....
Company .....
Address .....
City ..... Zone ..... State .....

BREVITY—Identify by IEN - 9390 if you write the maker

TRUCK . . Engine driven tractor, rated draw-bar pull is 5,000 pounds

Source: HENSEL GREEN & CO.
7-11 S. Clinton St., Chicago 6, Ill.



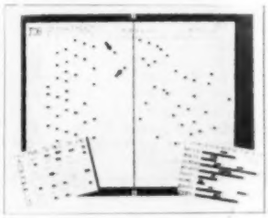
Model 50 is a new unit in the company's Unitow line of industrial tractors with draw-bar pull rated at 5,000 lb. and capable of towing 100 ton on trailers on a level floor. Overall length is 102 in. and width is 65 in. with turning radius at 118 inches. Overall height is 66 in. to the top of the steering wheel. Dual pneumatic-tired wheels for the drive at the rear and smaller pneumatic-tired front wheels assist in making short turns and operate satisfactorily over poor pavements and rough railroad yard crossings.

Drive is by an International Harvester 6-cylinder gasoline engine, rating 100 hp. at 3,600 rpm. Maximum torque is 173½ ft. lb. at 2,000 rpm. There are four speeds forward at 3 to 19 mph. and one in reverse at 2½ mph. Tractor weight is approximately 6,700 pounds. Equipment subject to specification includes an all-weather cab, electric lights, a snow plow, an arc-welding generator, a power winch rated at 20,000-lb. line pull, a rotary sweeper broom and fire extinguishers.

BREVITY—Identify by IEN - 9391 if you write the maker

RECORD KEEPING . . Steel board holds magnetic recording indicators

Source: MAGNETIC MERCHANDISING INC.
40 E. 32nd St., 1st Floor, New York 16, N. Y.



New elements have been added to the company's miniature permanent magnet indicators, previously described IEN-11687-48. The new assembly comprises all of the parts required to set up visual record-keeping for control purposes.

Steel panels mounted on cardboard in frames 1½ in. in depth are combined to make a board of required size. Individual panels measure 18 by 24 inches. Graph paper applies over the assembled board to set up horizontal and vertical rulings on ⅝-in. divisions. Plastic sticks, 12 in. in length by ½ in. in width, are equipped with permanent magnets at the ends to make borders and intersecting markers. Square, rectangular and round indicators, each a plastic-covered magnetic unit and similar arrows with magnetic and manual clips complete the equipment. Elements are illustrated and described in a 6 page folder, "Maggie Magnetic Visual Aids".

All Makers of Those And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
You may locate it in the product index, page 114

BREVITY—Identify by IEN - 9392 if you write the maker

MAUREY FHP V-DRIVES

Your Best Buy Three Ways

FOR SERVICE...
Fast Maurey delivery keeps up with your production line—prevents delay, speeds output.

FOR SAVINGS...
You pay no more for the extra quality and service Maurey gives. You *save* on the better performance and longer service that Maurey quality assures.

FOR COMPLETENESS...
Complete stocks of MOR-GRIP V-belts meet all FHP needs. 1736 stock sizes of Hi-Q V-Pulleys for any FHP speed ratio or standard shaft. In addition, Maurey builds special V-Drives to meet special requirements.

Write for these FREE Maurey Bulletins:
Bulletin FHP 101 informs about MOR-GRIP V-BELTS
Bulletin OEM 2000 informs about Hi-Q V-PULLEYS

MAUREY MANUFACTURING CORP.
World's Largest Manufacturer of Pressed Steel and Cast Iron Single Groove V-Pulleys

2916 S. Wabash Avenue • Chicago 16, Illinois

BREVITY—Identify by IEN - 9393 if you write the maker

Aetna ...a helping hand FOR CONVERSION HEADACHES

Are rapid production changeovers to specialized and exacting military needs taxing your energy, ingenuity and plant facilities? In this race against time, Aetna may be the solution to your knotty precision parts or special bearing problems.

Aetna's vast store of experience and tools accumulated from years of designing and producing "custom" ball and roller bearings and precision parts up to 38" O.D., has become so versatile that YOUR "specials" can usually be set-up for manufacture without special tools or dies—a pronounced saving in time, trouble and expense.

If you're in a "spot", reach for Aetna's helping hand. Just state your problem, send your prints, or ask that a near-by representative drop in. No obligation.

AETNA BALL AND ROLLER BEARING COMPANY
4600 SCHUBERT AVENUE • CHICAGO 39, ILLINOIS

Standard and Special Ball Thrust Bearings • Angular Contact Ball Bearings • Special Roller Bearings • Ball Retainers • Hardened and Ground Washers • Sleeves • Bushings • Miscellaneous Precision Parts

BREVITY—Identify by IEN - 9394 if you write the maker

FOR MIXING ANY FLUID you can't beat "Lightnin" Mixers

MIXCO Engineered

VERTICAL BALL BEARING MOTORS . . . with extra heavy insulation, special ventilation. Developed specifically for continuous heavy duty mixer service.

FULLY ENCLOSED GEARS . . . run in a sealed bath of lubricant that needs changing only once a year, under ordinary conditions.

EXTRA BALL BEARINGS HERE take the load of mixing shaft off the motor bearings. This adds years of service. All bearings are prelubricated, sealed against leakage.

INSTANT ADJUSTMENT TO ANY ANGLE . . . Ball and socket clamp permits correct angle for famous Lightnin double mixing action. Quick, positive locking; no wrench required.

EASY SHAFT ADJUSTMENT . . . Thread and taper, two-piece tube and chuck cannot loosen or jam. Shafts may be interchanged.

WIDEST CHOICE OF PROPELLERS . . . Standard and special types to meet every operating condition. Easily adjustable on shaft, or removable.

LIGHTNIN PORTABLE MIXERS save time . . . money . . . manpower, on every fluid agitation job in the plant. Many Lightnins have been in service over 20 years. World's largest line of standard mixers. Electric and air motor types; direct and gear drive. Portable sizes ⅛ to 3 HP. Other Lightnin Mixers in all sizes up to 500 HP. Write today describing your needs.

GET THESE HELPFUL *LIGHTNIN* CATALOGS

B-75 Portable Mixers
B-78 Propeller Mixers for Closed Tanks
B-76 Side Entering Mixers for Tanks up to 5 Million Gals.
B-89 Turbine and Paddle Agitators, 1 to 500 HP.
B-36 Condensed Catalog—complete line
DH-50 Laboratory Mixers

MIXING EQUIPMENT CO., Inc.
(MIXCO) 124 Mt. Read Blvd., Rochester 11, N. Y.
In Canada: William & J. G. Greey, Ltd., Toronto 1
REPRESENTATIVES IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 9396 if you write the maker

Acme Offers
Complete Facilities for

PRECISION GRINDING

FAST SERVICE . . . LOW COST

- INTERNAL
- EXTERNAL
- CRUSH FORM
- CENTERLESS
- TWIN DISC
- SURFACE
- THREAD

Acme is equipped to handle all types of precision grinding. Expert craftsmen, using newest methods and modern equipment, will do the job for you faster, better, more economically. Acme also offers a flat lapping service that can finish surfaces to within millionths. Write for details.

Acme Industrial Company
Makers of Standardized Jig & Fixture Bushings
215 N. Laflin Street • Chicago 7, Illinois
THE SERVICE SHOP TO INDUSTRY FOR MORE THAN 25 YEARS

BREVITY—Identify by IEN - 9397 if you write the maker

NO MORE CARBON SCRAPING

Nothing Decarbonizes and Cleans CARBURETORS, FUEL PUMPS, PARTS Like..

U.S. PAT. #2318842*
GUNK Dunk carbon carburetor and Parts Cleaning Kit. New 8½ gal. size deep "Vapor-catcher" design pail.

New—Improved—More Potent* GUNK HYDRO-SEAL

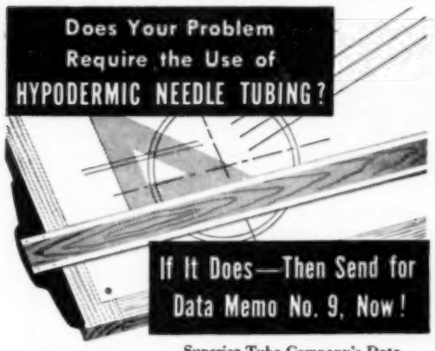
A WORD OF CAUTION
If it doesn't bear the Genuine GUNK trademark, it may be a partly diluted imitation—and will not give you the Safety and Advantages of Genuine GUNK and should be flatly refused.

*1. Faster . . . Terrific penetration . . . new improved odor.
2. Quickly digests and removes carbon gum, paint, lead, makes possible accurate visual inspection and fitting of delicate metering mechanisms, jets, orifices and diesel nozzles . . . without etching.
3. Lasts more than one year . . . due to water blanket.
4. Works hot or cold . . . Rinses wet or dry.
5. Patented Double Barrel Performance Guaranteed.

SOLD BY BETTER JOBBERS EVERYWHERE
Write for Name of Nearest Stocking Jobber
— Flatly Refuse Substitute Imitations —

IMMEDIATE DELIVERY 1 GALLON OR A TANK CAR
CURRAN CORP. Mfg. Chemists LAWRENCE, MASS.

BREVITY—Identify by IEN - 9398 if you write the maker



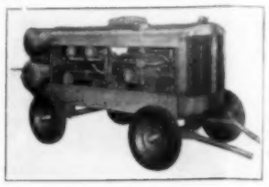
Superior Tube Company's Data Memorandum No. 9 contains the basic information you'll need to order Hypodermic Needle Tubing. Today, because of conditions beyond our control, we may not be able to fill all of your needs for small diameter stainless steel tubing (.014" O.D. to .203" O.D.) but it will pay you to check with us. We may be able to supply your needs out of stock. Write today for Data Memo No. 9.

Superior
THE BIG NAME IN SMALL TUBING
All analyses—.010" to ⅛" O.D.
Certain analyses (.035" max. wall) up to 1⅛" O.D.
SUPERIOR TUBE COMPANY, 2016 GERMANTOWN AVE., NORRISTOWN, PA.

BREVITY—Identify by IEN - 9399 if you write the maker

COMPRESSOR . . Engine driven, wheel mounted, 200 cfm. at 1,200 rpm.

Source: SCHRAMM INC.
800 E. Virginia Ave., West Chester, Pa.



Gasoline engine and direct-connected compressor in this new Model-210 Unistage equipment are essentially duplicates of each other. Approximately 90 percent of the engine parts are interchangeable with those in the compressor. The six-cylinder units are equipped with overhead valves, forced-feed lubrication.

Control centers in the company's Pneumastat which opens and closes the engine throttle in step with demand for air. The resulting action keeps the engine output in step with requirements, results in even flow of air under variable load. Engine and compressor are water cooled.

Equipment includes electric starter, cam-operated mechanical intake valves, dual fan belts, air receiver and enclosure.

BREVITY—Identify by IEN - 9400 if you write the maker

CUTTING . . Abrasive discs for concrete, brick, tile, stone

Source: CLIPPER MFG. CO.
11 E. 28th St., Kansas City 8, Mo.

List price is $1.80 to $24.38

Break-Resistant designates new design in the company's line of abrasive discs to cut masonry. Sizes range from 6 to 10 in. for use in portable power machines and from 12 to 20 in. for the company's stationary masonry saw. Thickness is ⅛ inch. The disc is manufactured from layers of glass-fiber cloth impregnated with resins and silicon carbide and submitted to hydraulic pressure, then finally processed in kilns. The resulting disc will withstand bending and twisting.

BREVITY—Identify by IEN - 9401 if you write the maker

HEATING . . Electric oven operates on 110 volt ac. to 800 deg. F.

Source: GRIEVE-HENDRY CO.
1103 N. Paulina St., Chicago 22, Ill.

Range is 100 to 800 deg. F. for this new Model-HT electric oven. The double-wall steel housing is insulated with fiber glass and equipped with a thermostat, a thermometer and a pilot lamp. Inside the oven is a drip pan and one shelf. Additional removable shelves and a stand can be specified. Overall dimensions are 30 by 25 by 24 inches. Inside measures 22 by 18 by 16 inches. The oven connects into a 110-volt power source. It can be specified for operation on 220 volts.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9402 if you write the maker

Electrically-Controlled Air-Powered DIAL FEED

Adjustable for 4, 6, 8, 12 or 24 stations

THE Bellows air-powered Rotary Feed Table is a complete "packaged" unit with all valves and valve operating controls built in. The built-in Electroaire Valve simplifies synchronized operation with drill presses, punch presses, arbor presses, etc. 10" diameter table top is geared to provide 4, 6, 8, 12 or 24 stations. Table top may be drilled, tapped, or otherwise machined for mounting jigs, fixtures or even larger size table tops.

• *Write today for Bulletin 7-80. Address Dept. IEN-951*

The Bellows Co.
Akron 9, Ohio

BREVITY—Identify by IEN - 9403 if you write the maker

Hard To Find .. but we have them!

Lathe Cut Parts · Recessed Bumpers · Mushroom Bumpers · Plug Type Bumpers · Grommets · Suction Cups · Chair Tips · Tack Screw Bumpers

WORLD'S LARGEST ASSORTMENT OF STANDARD MOULDS FOR SMALL MECHANICAL RUBBER PARTS

SAVE MONEY! SEE US BEFORE YOU DESIGN IT!
Write, wire or phone your needs today! Chances are we have just the mould you want! Lowest possible prices — prompt, efficient service. Request new 44 page catalog, today.

LAVELLE *Rubber Company*
1811 W. Hubbard St., Chicago 22, Ill.

BREVITY—Identify by IEN - 9404 if you write the maker

Thousands of companies are cutting costs with Kodagraph Autopositive Paper . . .

this new, free booklet shows you *how*

Here you'll find a selection of case histories illustrating the many different ways industry is using Kodagraph Autopositive Paper—the low-cost photographic intermediate material . . . which gives you positive copies *directly;* which can be handled in room light . . . and printed with existing equipment.

Interesting and Profitable Reading

- How the American Brake Shoe Company (Kellogg Division) . . . broke the bottleneck in reproducing blueprints.
- How the Cleveland Crane and Engineering Company . . . saves creative drafting time.
- How the Cooper-Bessemer Corporation . . . reduced possibility of costly reading errors in the shop.
- How the Crompton & Knowles Looms Works . . . simplified its engineering drawing files.
- How the Ford Motor Company . . . saves $75,000 per year in retracing costs.
- How The Heald Machine Company . . . produces photographic intermediate prints at a new low cost.
- How the Ingersoll-Rand Company (Compressor Div.) . . . salvages old drawings . . . employs ingenious short cuts in drafting.
- How the M. W. Kellogg Company . . . assures photo-lasting intermediates for its overseas branches.

Every engineer, draftsman, and architect should have a copy of "New Short Cuts and Savings." *Write for yours today.*

EASTMAN KODAK COMPANY
Industrial Photographic Division, Rochester 4, N. Y.

Kodagraph Autopositive Paper
"The Big New Plus" in Engineering Drawing Reproduction
Kodak

BREVITY—Identify by IEN - 9406 if you write the maker

5,348 RELAY TYPES

by

STRUTHERS-DUNN

include shapes, sizes, ratings, mountings, housings and other characteristics that fit them exactly to a high percentage of all relay applications . . . military or commercial

Struthers-Dunn, Inc., 150 N. 13th St., Philadelphia 7, Pa.

BALTIMORE • BOSTON • BUFFALO • CHARLOTTE • CHICAGO • CINCINNATI CLEVELAND • DALLAS • DETROIT • KANSAS CITY • LOS ANGELES MINNEAPOLIS • MONTREAL • NEW ORLEANS • NEW YORK • PITTSBURGH ST. LOUIS • SAN FRANCISCO • SEATTLE • SYRACUSE • TORONTO

BREVITY—Identify by IEN - 9407 if you write the maker

Read how to brighten Plant Interiors WITH JUST ONE COAT

New free book tells how to get better paint results at lower cost . . . how to buy and apply the right aluminum paints.

Alcoa does not make paint. We prepared this book so you can know about many improvements in aluminum paints; can buy the best paint for each job without lengthy specifications and tests; so you can apply paints best for long life and good appearance.

Free book is packed with maintenance painting tips, coverage tables, facts on right aluminum paints to use inside and out, on wood, metal and hot surfaces. For your free copy, attach the coupon to your letterhead and mail today.

MAIL THIS COUPON TODAY!

ALUMINUM COMPANY OF AMERICA
Paint Service Bureau, 1786J Gulf Bldg., Pittsburgh 19, Pa.
Please send me a free copy of "Painting with Aluminum".
Name (please print) _____
Address _____
City _____ State _____
I want to paint the following _____

Look for this shield on aluminum paints made by many paint manufacturers using ALCOA PIGMENTS. ALCOA ALBRON

BREVITY—Identify by IEN - 9409 if you write the maker

CONVEYING . . Chain mounted flights, enclosed housing for bulk materials

Source: MATERIALS HANDLING EQUIPMENT CO.
2619-21 N. Normandy Ave., Chicago 35, Ill.

The company announces take-over of manufacture and sales of the Uni-Flo closed-circuit chain-mounted flight conveyor, previously described IEN-3341-44. It is prepared to supply the equipment to meet specified requirements. The conveyors operate in a closed circuit to receive, forward and discharge dry bulk materials in powdered or granular form inside a closed housing. Chemicals, cement, food, feed, fertilizers, coal can be conveyed in desired combination of horizontal, angular and vertical movement between feed and delivery at 50 fpm. in a continuous stream. The line includes sizes ranging from 0.1 to 1.03 cu. ft. of volume per ft. of length to provide 250 to 2,620 cu. ft. of handling capacity per hour.

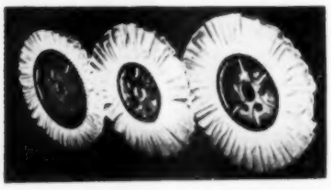
The flights are assembled in rigid or hinged arrangement on the chain in two-link intervals. Rigid flights are employed when conveying is in horizontal direction only. Hinged construction is used for vertical and angular travel. In the latter case a synchronized power-driven cam at the discharge point tips the flights for gravity discharge.

Bulletin 152, 16 pages, "Uni-Flo Conveyor Elevator", presents illustrated detail description of the equipment, its applications and operation, lists materials that can be handled, includes installation photographs and diagrams with formulas and factors for preliminary calculation of required horsepower and operating conditions. Dimension sheets are included.

BREVITY—Identify by IEN - 9410 if you write the maker

POLISHING . . Buffing wheels, centrifugally cooled, 9 to 20 inches

Source: UNITED BUFF PRODUCTS CORP.
252 Oak St., Dept. T, Passaic, N. J.



The metal hub on which this new buffing wheel is built is flanged in sectional outline and carries a series of openings leading to radial passages. As the buff is rotated these openings scoop air in manner similar to the vanes in a centrifugal blower. Centrifugal action carries the air outward through the buff material to keep it ventilated. Sections are standard at ½ in. in width. Two hub diameters are 5 and 7 inches. The assembled units can be employed in any required number. Outside diameter is 9 to 20 inches. Airflow Pressure-Cooled is the designation.

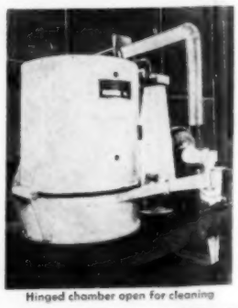
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9411 if you write the maker

The Bowen Laboratory Spray Dryer

...MEETS ALL REQUIREMENTS FOR:

SMALL LOT PRODUCTION & LABORATORY RESEARCH



Hinged chamber open for cleaning

The Table Model is "scaled-down" from Bowen commercial spray dryers. The unit can be used for actual small lot production of valuable materials or for test work where data obtained is used for design of production units.

1. EASY TO CLEAN — Hinged chamber can be opened for washing or brushing. All ducts are flanged and fastened by quick-opening wing nuts to make cleaning easy.

2. SIMPLE TO OPERATE — Engineered for ease of operation — air temperatures are controlled automatically. Requires space of only 5 x 6.

Observation of product formation

BOWEN ENGINEERING, INC.
NORTH BRANCH 10
NEW JERSEY

BOWEN

Since 1926 Recognized Leaders in Spray Dryer Engineering

BREVITY—Identify by IEN - 9412 if you write the maker

New Recording Voltmeters and Ammeters

The Latest Developments in Electrical Measurement

Outstanding for

- **High actuating torque**
- **Stability of calibration**
- **Low electrical burden**
- **Dependable accuracy**

Bristol Series 500 Recording Voltmeters and Ammeters give you these features—plus a number of refinements for convenient operation and servicing.

The new moving-iron measuring mechanism is a type known for high actuating torque and low electrical burden . . . refined by Bristol engineers for greater accuracy and ruggedness.

Write for Bulletin E1111, to THE BRISTOL COMPANY, 107 Bristol Road, Waterbury 20, Conn.

BRISTOL

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

BREVITY—Identify by IEN - 9413 if you write the maker

for free or controlled supply

stretches yield

Regardless of free or controlled supply of your light gauge cold rolled strip and/or spring steel you can always count on more feet per lb., more finished parts per ton from Thinsteel. Precision rolling and advanced processing techniques have assured greater yield for many years to users of CMP Thinsteel; provided the margin of difference (through close tolerances and exacting physicals) for improved production and product betterment.

Perhaps we can't supply your requirements now, however we welcome your interest for future needs and will be pleased to send you information.

the Cold Metal Products co.
YOUNGSTOWN 1, OHIO

New York • Chicago • Indianapolis • Detroit • St. Louis • Los Angeles • Cleveland

LOW CARBON, HIGH CARBON (Annealed or Tempered) STAINLESS AND ALLOY GRADES, ELECTRO ZINC COATED ARE AVAILABLE FROM:

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THE KENILWORTH STEEL CO., 730 Boulevard, Kenilworth, New Jersey Phones: N. Y., COrtlandt 7-2427; N. J., UNionville 2-6900
PRECISION STEEL WAREHOUSE, INC., 4425 W. Kinzie, Chicago • Phone: COlumbus 1-2700

BREVITY—Identify by IEN - 9415 if you write the maker

A Better MILLING MACHINE From Any Angle...

It was a popular machine tool as the Vernon Milling Machine even before SHELDON completely re-engineered and improved it . . . added "Precision" Timken Tapered Roller Bearings; added a completely new variable speed type drive, increased the speed range and provided an optional power feed.

Quality-built throughout, in the modern SHELDON plant which was built and specially tooled to make fine precision machine tools, the modern SHELDON Milling Machine is truly "a better milling machine from every angle." Write for Catalog.

SHELDON CHICAGO

SHELDON MACHINE CO., Inc., 4208 North Knox Ave., Chicago 41, Ill.

BREVITY—Identify by IEN - 9416 if you write the maker

GUARANTEED Leak Proof ROBB "Quick-Seal" Couplings

Robb "Quick Seal" Couplings left to right, 1¼", ⅜", 2", 1", 4" diameters.

- Available in all sizes from ¼" to 6".
- Fabricated from any suitable metal to handle any material from acids to compressed air.
- Handles any required high or low or combined pressures with absolutely no leaks.
- Full free flow in all sizes.
- Furnished with or without check valves.
- Quickly connected or disconnected by a simple push or pull.

Write for descriptive catalog — today.

ROBB MANUFACTURING COMPANY

1307 Washington Blvd. • Pittsburgh 6, Pa.

BREVITY—Identify by IEN - 9417 if you write the maker

LOW COST, ORGANIZED STORAGE SPACE

32-DRAWER (96 COMPARTMENTS) Metal Storage Units

CRYSTAL CLEAR OR MATCHING GRAY PLASTIC DRAWERS

MODEL J-32

$119.95 F.O.B. AKRON

15⅝" high 6" deep 12½" wide

HUNDREDS OF USES:

Useful in every shop, lab, office, stockroom, store, home, assembly line . . . in radio, TV, photographic and ignition work.

Orderly storage for small parts, bolts, nuts, drills, tools, carbide tips, buttons, thread, paper clips, labels, pins, rubber bands, stamps, films, photo supplies, negatives, fishing tackle, artist supplies, medical supplies, marine supplies, drugs, jewelry, etc. Safety catch ends accidental spilling, identify card drops into slot in drawer front.

Made in 6 sizes:

J-64	64 drawer	192 compartments	$21.37
J-32	32 drawer	96 compartments	11.95
J-24	24 drawer	72 compartments	10.25
J-16	16 drawer	48 compartments	7.29
J-12	12 drawer	36 compartments	5.43
J-8	8 drawer	24 compartments	4.08

SEND FOR FREE DESCRIPTIVE FOLDER

AKRO MILS, INC. P.O. BOX 989 AKRON 9, OHIO

BREVITY—Identify by IEN - 9418 if you write the maker

CLAMP . . Mounts instrument in a panel, releases at the front

Source: MARMAN PRODUCTS CO. 938-42 W. Florence Ave., Inglewood, Calif.

No. 23906 designates new clamp to mount 2-in. instruments in a panel and provide for release so the instrument can be drawn out for servicing with access only to the front of the panel. The clamp secures in place by two screws. Then an instrument is slipped in from the front of the panel through the main mounting hole. One screw remains tightened in place. The other is turned to operate a stud in a cam slot that opens and closes the clamp.

BREVITY—Identify by IEN - 9419 if you write the maker

PACKAGING . . Paper tube in Government Specification materials

Source: MIDLAND PRODUCTS INC. 4419 Oleatha Ave., St. Louis 16, Mo.

Supplied in rolls or cut lengths

New form of the company's Tip Top Tubing, previously described IEN-9453-44, now includes Government Specification materials for barrier wrapping finished products. The new materials meet Federal Specification Jan-B-121, Jan-P-125, L2 and others used in the defense program.

Sizes range from ¾ to 60 in. in width, when folded flat, the equivalent in cylindrical diameters of ½ to 37 inches. The flat tube is supplied on reels containing 1,000, 1,500, or 2,000 lineal feet. Products to be wrapped are slipped into the open tube which is then cut off to the desired length and closed.

BREVITY—Identify by IEN - 9420 if you write the maker

PROTECTING . . Hinged face shield with screened sides and plastic window

Source: INDUSTRIAL PRODUCTS CO. 2801 N. Fourth St., Philadelphia 33, Pa.

Tel-A-Shield is a new assembly of molded-fiber shield with screened sides. A cellulose-acetate window in the front measures 6 by 9 in., is made of 0.010-in. material. The window can be replaced quickly. The side screens are 18-mesh galvanized wire with aluminum binding. Ventilation is promoted by brass-screen grommets in the base and top. The complete unit is hinged on an adjustable headgear fitted with a leather sweatband.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9421 if you write the maker

CP Super Cycle Grinder packs more power per pound than any other portable tool.

SPEEDING ASSEMBLY with 600 Super Cycle Tools

More than 600 Super Cycle Tools are in use in one automotive assembly plant because they give greater output per man-hour than any other type of portable electric tool. They have squirrel cage induction type motor, operating on 360 cycle, 3-phase, 220-volt current. Maintain full working speed under load. Upkeep is low; no brushes to replace, no armature to burn out. Write for Catalog 905-2.

CHICAGO PNEUMATIC TOOL COMPANY

General Offices: 8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

BREVITY—Identify by IEN - 9422 if you write the maker

What Answers Can You Come Up With?

by Utilizing FULLERGRIPT

GRINDER SHROUD devised from Fullergript brush strip by maker of vertical die and surface grinder . . . concentrates coolant and protects operator from spray.

REMOVING GLOSS from molded counter top accomplished by buffing cylinder with widely-spaced but spiralled Fullergript brush strips. Engineering trick was to work out angle of spiral giving an even buff.

NEW ANSWERS to puzzling problems can often be found with the brushing action of Fullergript strips. You are introduced to new vistas of mechanical possibilities. And our engineers will work with you. Simply write and ask for information from . . .

FULLER BRUSH FULLERGRIPT (At home... in business, Too)

THE FULLER BRUSH COMPANY
INDUSTRIAL DIV., 3383 MAIN ST., HARTFORD 2, CONN.

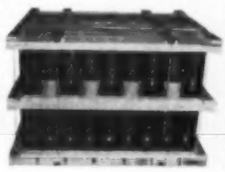
BREVITY—Identify by IEN - 9423 if you write the maker

Can we help you with defense orders?

GERRARD ROUND STEEL STRAPPING complies with packaging specifications JAN-P-106A and JAN-P-108

Take advantage of Gerrard's years of experience in packing and packaging when you face the problem of packing defense orders. Gerrard Round Steel Strapping complies fully with the joint Army-Navy specifications JAN-P-106A and JAN-P-108 for overseas packing.

A Gerrard engineer can help you with your packaging problems. He can assist you to plan boxes and cartons that conform to specifications, and at the same time help you to make the best use of the steel strapping available for packaging. Where practicable, our engineer will demonstrate the advantages of Gerrard Strapping for bundling, palletizing, or securing packages with the Diagonal Tie.



These shells were easily and securely tied to a pallet with Gerrard Round Steel Strapping.

Orders for defense requirements receive preference in delivery according to current regulations. Strapping available for non-defense orders is being equitably distributed among our customers. Phone, write or wire for further information.

Gerrard Steel Strapping Co., 4701 South Richmond St., Chicago 32, Illinois.

USS

UNITED STATES STEEL

BREVITY—Identify by IEN - 9424 if you write the maker

takes half the "push"

SERVICE SMOOTH-ROLLING "PUSH-E-Z" FLOOR TRUCK

"PULL-E-Z" Truck differs only in running gear from the extra-husky, cost-cutting "PUSH-E-Z".

*Fully loaded, PUSH-E-Z starts and rolls *twice as easy* as an average hand truck . . . as proved by tests. Platform of 10-gauge steel electrically welded to 3-in. rolled channel frame. Famous FORGEWELD casters. Casters and wheels roll on Hyatt roller bearings. Capacity to 6000 lbs. Prompt delivery. Write for specifications.

SERVICE CASTER & TRUCK CORP.

Executive Offices Albion, Michigan

Plants at Albion, Mich. and Somerville 43, Mass. Representatives in all Principal Cities

BREVITY—Identify by IEN - 9425 if you write the maker

in your hands..

can be a good first step toward improving spraying operations in your plant. See for yourself how Spraying Systems' specialized experience in spray nozzle design and manufacture can work for you.

Get the EXACT spray nozzle type and size to fit your need.

WRITE for Catalog 22 . . . General Catalog
Catalog 23 . . . Pneumatic Atomizing Nozzle Catalog

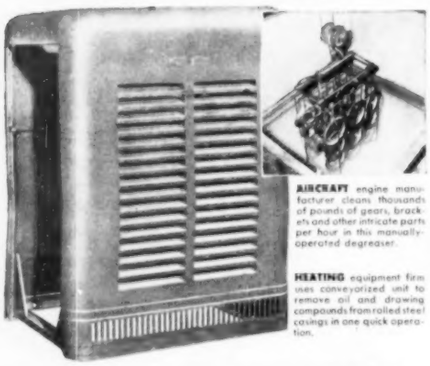
SPRAYING SYSTEMS CO.
3208 RANDOLPH STREET • BELLWOOD, ILLINOIS

SPRAYING SYSTEMS SPRAY NOZZLES

the SPECIFIED nozzles for industrial use

BREVITY—Identify by IEN - 9426 if you write the maker

For large or small parts



AIRCRAFT engine manufacturer cleans thousands of pounds of gears, brackets and other intricate parts per hour in this manually-operated degreaser.

HEATING equipment firm uses conveyorized unit to remove oil and drawing compounds from rolled steel casings in one quick operation.

VAPOR DEGREASING
cleans any metal in one fast step

Thousands of manufacturers are now cleaning metal parts of all sizes quickly and economically by vapor degreasing with Du Pont Trichlorethylene. Vapor degreasing equipment is easy to install, easy to operate, easy to maintain. And it's especially applicable for plants that are expanding production or doing cleaning for the first time.

You, too, can keep cleaning costs down and production up with vapor degreasing.

Du Pont degreasing solvents have been widely used for many years, and are available under various trade marks, such as "Triclene" D.

These solvents are stable . . . stand up against contaminating and destructive materials . . . are the best yet developed by Du Pont for metal degreasing.

DU PONT *non-flammable* **SOLVENTS for VAPOR DEGREASING**

SOLD NATIONALLY THROUGH DISTRIBUTORS

DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Mail the coupon below for more facts on vapor degreasing

E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Dept., Wilmington 98, Delaware

Please send me detailed information on Vapor Degreasing: applications, advantages, equipment used, and Du Pont solvents available. We are interested in cleaning _____ products.

Name _____ Position _____

Firm _____

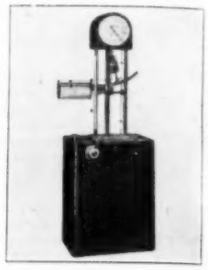
Street and No. _____

City _____ State _____

BREVITY—Identify by IEN - 9428 if you write the maker

TESTING . . Motor driven machine for tension, compression, to 300 pounds

Source: W. C. DILLON & CO.
1419-23 S. Circle Ave. Forest Park, Ill.



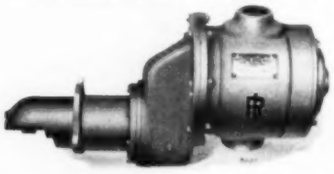
New **range** has been added to the company's previously developed universal machine. Tests can be run now in tension, compression, shear and transverse loading to a maximum of 300 lb. as compared to the previous 100 pounds. Range is selected by positioning the correct one of a set of weights on a pendulum. The machine is loaded by starting a motor and stepless variable-speed transmission in the base to rotate the vertical screw connecting to the cross head. Speed is set by hand adjustment of the transmission at a dial and handwheel on the front of the housing. Rate is between 0 and 20 inches per minute.

The pendulum travels about a quadrant carrying ratchet teeth which engage pawls at the bottom of the pendulum arm to hold position when a specimen fails. Load is read on the dial at the top of the assembly. A stress-strain curve can be plotted on the drum-mounted chart at the left-hand side. This chart is rotated by movement of the cross-head. The trace is made by connection between a pen arm and the pendulum. Elongation in the specimen is read on a scale on one of the upright columns that guide the cross head. Representative materials that can be tested include adhesives, cloths, ceramics, insulation, leather, plastic, paper, springs, wire.

BREVITY—Identify by IEN - 9429 if you write the maker

DRIVE . . Pneumatic motor and transmission to crank an engine

Source: INGERSOLL-RAND CO.
11 Broadway, Dept. NR, New York 4, N. Y.



Multi-Vane pneumatic motor is combined with a Bendix drive in this new engine cranking drive. The motor consists of a solid hardened-steel rotor revolving in a cylinder made of hardened wear-resistant alloy enclosed by bronze end plates. Five vanes on the rotor provide the turning force. The shaft is mounted on ball or roller bearings. The motor housing and the gear assembly can be rotated with reference to each other for clearance in assembly.

Two sizes, 9BM and 20BM, rate 7 and 19 hp. on 75-lb. pressure. They rate 16 and 41 hp. on 150 pounds. Weights are 40 and 103 pounds. Input is 7 and 16 cfm. of compressed air for a starting cycle.

Bulletin 5094, 8 pages, "Air Cranking Motors," presents illustrated description, dimension drawings and a selection list for various makes of internal-combustion engines.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9430 if you write the maker

The Simplest Filter Cartridge Lasts the Longest . . . Twice as Long

Cartridge renewals are cut at least in half with Cuno Micro-Klean. And throughout its service life, Micro-Klean is guaranteed for specific performance.

Exclusive "graded density in depth" doubles dirt capacity, prevents clogging. Exclusive resinous impregnation and polymerization prevents shrinking, swelling, channeling. When replacement is required—it's *quick* and *clean.* Housing easily disassembled.

Guaranteed removal of *all* dirt: 10, 25, or 50 microns in size plus a large percentage down to 1 micron. Write for Bulletin MK-035. Cuno Engineering Corporation, Dept. 699M, South Vine Street, Meriden, Connecticut.

CUNO *Fluid Conditioning*
Removes More Sizes of Solids from More Types of Fluids

BREVITY—Identify by IEN - 9431 if you write the maker

Worth a Second Look

Since '26 JOY electrical plugs and receptacles have been Industry's outstanding value for portable power transmission. Molded as trim, one-piece (Neoprene/rubber) units they can't crack or shatter . . . won't lose their shape, and are amazingly resistant to falls, blows, acids, oils, moisture or sunlight. Thousands of styles and shapes ranging from "cartridge-size" models to mammoth round (S.P.B.) units used in marine and mining applications have been developed. NO question about it . . . the JOY electrical connector line deserves a "second look". Ask for your free copy of Bulletin MC108

M.E. 651.1

ILLUSTRATION SHOWS JOY ROUND STYLE PORTABLE PLUGS

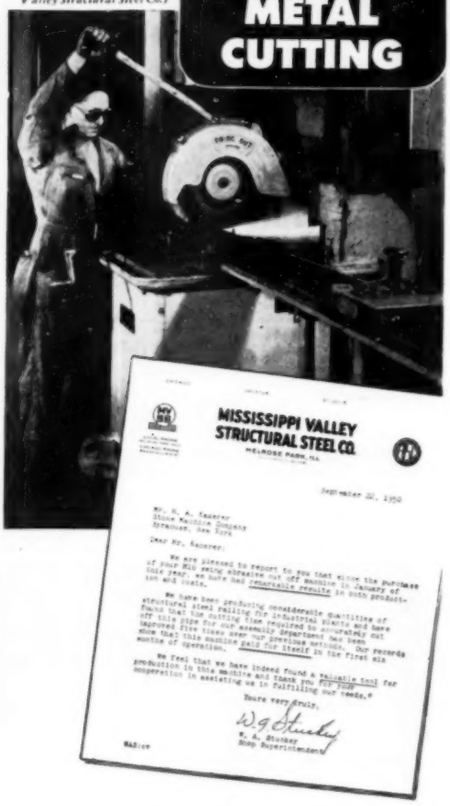
100 YEARS ENGINEERING LEADERSHIP — 1851-1951

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD. GALT, ONTARIO

BREVITY—Identify by IEN - 9432 if you write the maker

LOW-COST METAL CUTTING

(Photo Courtesy Mississippi Valley Structural Steel Co.)



This progressive fabricator now has six Stone metal cut-off machines in operation.

The Stone Swing-Cut in your shop will cut metals at the rate of 4 seconds per square inch at a cost of approximately 1½ cents per square inch. You can lower your metal-cutting costs — in ferrous or non-ferrous materials — with a Stone Swing-Cut.

Write today for further information.

STONE MACHINERY CO., INC.
310 Fayette St. Manlius, New York

BREVITY—Identify by IEN - 9434 if you write the maker

ERASE faster, easier electrically!

Bruning's exclusive 7" eraser ... won't "fly out"

No other machine or method erases as quickly, easily and cleanly as the Bruning Electric Erasing Machine.

The 7" eraser (exclusively Bruning's) prevents those eraser "fly outs" which let ordinary machines damage your drawings so often.

Your Bruning machine is "lifetime oiled", runs continuously for an indefinite period without heating. It is quiet and you hold it comfortably like a pencil, permitting full view of your work for erasing accuracy. You operate it with convenient finger-tip control.

FREE FOLDER gives details on exclusive erasing advantages. For your copy write today to Charles Bruning Company, Inc., Dept. H-901, 100 Reade Street, New York, New York.

BRUNING ERASERS

BREVITY—Identify by IEN - 9435 if you write the maker

We Got EXTRA MAN-HOURS that

STEPPED UP PRODUCTION 25%

without adding to payroll or employee workload

Automatic Electric Trucks Actually Released 2 out of 3 Men Engaged in Hand-Handling Making Them Available for More Productive Work

No One Makes Trucks Like Automatic... and No Truck Costs Less To Operate

With Automatic Electric Trucks, we have stepped up production 25% without adding another man or increasing our plant's production facilities. Bottlenecks have been eliminated, interdepartmental movement operations speeded up, and we got a bonus in warehouse space because these trucks stack right up to the ceiling. In receiving and shipping alone we have cut costs 50%, and throughout the plant, increased handling per man 50% to 55%. You can get extra man hours too. For complete details write to:

Trade Automatic Mark
ELECTRIC TRUCKS
Lifting LIFE'S LOADS

Automatic Transportation Co., 109 West 87th Street, Dept. P-1, Chicago, Illinois

BREVITY—Identify by IEN - 9436 if you write the maker

Sure! Maintenance Men are HARD TO GET...

That's why I depend on

HILLYARD MAINTAINEER SERVICE

Why "buck" the problem when you can relax with easy-going Hillyard *Floor Care*. Simplified Hillyard Care substitutes "know-how" for brawn . . . easier methods save man hours of work . . . specialized *chemical* products perform with "behind-the-ears" thoroughness . . . when I need help—Hillyard sends along a trained floor expert to lend a hand on the job . . . his straight-from-the-shoulder advice doesn't cost me a cent.

YOU CAN'T BEAT SERVICE LIKE THAT
any day in the week—particularly NOW when *good* maintenance men are so hard to find.

★ Talk over your maintenance program with a Hillyard Maintainer today. Get the benefit of his years of specialized experience. Learn the Hillyard way to maximum maintenance with a minimum crew . . . and *reduce those costs as much as* 50%. Write for Free Hillyard Help.

"on your staff not on your payroll"
Dept. D1-9

HANDLE WITH HILLYARD CARE!

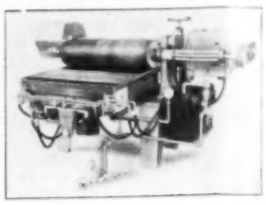
St. Joseph, Missouri

Branches in Principal Cities

BREVITY—Identify by IEN - 9437 if you write the maker

POLISHING . . Roll type machine to finish flat non-magnetic work

Source: CLAIR MFG. CO.
1004 S. Union St., Olean, N. Y.



A vacuum chuck has been developed for use on the company's Model-203 roll-type polishing machine to hold non-magnetic work such as compacts, cigarette cases, lithograph sheets, flatiron sole plates, blanking stock, kick and push plates, fan blades, name plates, escutcheon plates. It mounts a moving work table consisting of a perforated plate assembled over a sealed air space which is connected to a vacuum pump through a four-way spring-return foot valve. Maximum work area is 38 by 36 inches. The perforated plate is covered by a rubber mat.

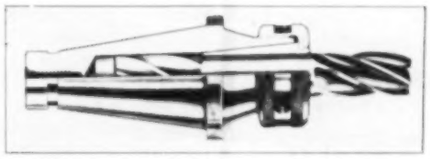
The work feeds forward and back under the revolving-roll spindle by hydraulic pressure through a movement that is adjustable between ¾ and 36 inches. At the same time it travels laterally in an adjustable stroke between ½ and 1¾ inches. Raised pads conforming to contour of the work being finished prevent the roll from coming in contact with the mat and do not interfere with the vacuum action.

The roll is made up of an assembly of buffs to 12 in. in diameter by 40 in. in length. The roll spindle is floated at a predetermined uniform pressure by means of an air circuit built into the machine. Representative materials that can be finished include aluminum, brass, copper, plastic, wood.

BREVITY—Identify by IEN - 9438 if you write the maker

CHUCK . . Collet design to hold single and double end cutters

Source: ERIC S. JOHNSON CO.
228-32 E. Ohio St., IEN 5, Chicago 11, Ill.



Knurled nut on the nose end of this new Swedish collet chuck is turned to tighten and loosen the collet on a cutter shank. The nut is designed to pull the collet loose in reversing direction. When the collet has been removed from the chuck it clears the nut readily for change in size. The chuck is normally supplied with a National Standard taper shank ranging from No. 30 to No. 60.

Eight sizes are available, the smallest of which takes seven collets between ⅛ and ½ in. in working capacity. The largest takes seven collets ranging from ⅞ to 2 inches. A straight-shank insert chuck of the same collet construction can be employed in the larger unit in ¾, 1, and 1¼-in. shanks for collet ranges from ⅛ to ⅝ in., ⅛ to ½ in., and ¼ to ⅝ inch.

Locknut diameter is 1½ to 4 inches. Extension in front of the spindle shank is 1⅝ to about 4 inches. Chucks with Morse taper or Brown & Sharpe taper shanks can be specified.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 9439 if you write the maker

Speed fastening in tight places with Bostitch P4 Stapling Plier

Here's quick, easy fastening for many jobs in shipping rooms and manufacturing departments. Bostitch P4 Stapling Plier securely seals small packages, quickly repairs light and medium weight containers. Ideal for sealing flexible corrugated wrappings. Also saves time and materials on many light and medium manufacturing jobs. Powerful action with little effort. For complete details on Bostitch P4 Plier, write us direct. BOSTITCH, 468 Mechanic Street, Westerly, Rhode Island.

Staple can be applied 4¾" in from edge of container with a Bostitch P4 Plier.

BOSTITCH fastens it better, AND FASTER, with wire — ALL TYPES OF MACHINES FOR APPLYING STAPLES — ALL TYPES OF STAPLES APPLIED BY MACHINES

BREVITY—Identify by IEN - 9440 if you write the maker

Type "B" Pressure Reducing and Regulating Valve

There's a CASH-ACME Automatic Valve to handle anything that flows —Water, Air, Steam, Gases, Chemicals, Refrigerants, Oil, Gasoline and all other types of liquids.

Steam Equipment Manufacturers Specify CASH-ACME!

In any industry that requires consistent pressure control, CASH-ACME is specified by more and more manufacturers. Write today and find out how a CASH-ACME Automatic Valve can help with the successful operation of your product.

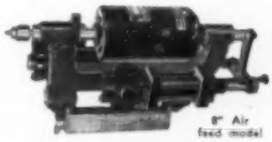
CASH ACME SILENT SENTINEL Automatic Valves

A. W. CASH VALVE MANUFACTURING CORP.
6612 E. Wabash Avenue
Decatur, Illinois

BREVITY—Identify by IEN - 9441 if you write the maker

Precision Hi-Speed Drilling in Metal, Wood, Plastic or Composition—.004"-.156".

Check These 9 Features



8" Air feed model

- Fingertip variable speed
- Fast approach air feed
- Hydraulic feed control
- Electric or manual controls
- Deep hole drill cleaning
- Sensitive precision spindle
- 1000-10,000, 2500-15,000 RPM
- Can be mounted at any angle, with hand or power feed
- Price 8" model, hand feed, from $130.00. Air feed model (as shown) from $238.50.

Write for helpful bulletin

The ELECTRO-MECHANO CO.
267 E. ERIE ST., MILWAUKEE 2, WIS.

BREVITY—Identify by IEN - 9442 if you write the maker

Get the advantages of AUTOMATIC BAR STOCK CUT-OFF at a fraction of the cost you might expect

with a **WELLS SAW** *and* **WELLS-O-BAR Feed Master**

A set-up for automatic repetitive cutting need not be prohibitively expensive. By combining a Wells Metal Cutting Band Saw and a Wells-O-Bar Feed Master you can automatically cut any quantity of identical lengths of bar stock with a modest investment. See your Wells Dealer for complete information or write direct.

Products by Wells are Practical

Wells

METAL CUTTING BAND SAWS

WELLS MANUFACTURING CORPORATION
1111 MADISON ST., THREE RIVERS, MICH.

BREVITY—Identify by IEN - 9443 if you write the maker

Backstand Method Saves Time!

Milwaukee Electric Tool Corp. eliminates lengthy operation ...increases production 40%

Problem: The Milwaukee Electric Tool Corp. had a time-consuming method for sanding cast aluminum motor housings for portable electric tools. After polishing with a hard wheel, they sanded with a #46 set-up wheel and finished with a grit #100 set-up wheel. This operation was too long and costly.

Solution: The Milwaukee Electric Tool Corp., switched to the backstand belt for this polishing job.

Result: Now one Armour Backstand Belt does the work of the hard wheel and the #46 set-up wheel — eliminating one operation. A better finish is obtained and production is up 40%!

Manufacturers of hundreds of different industrial and consumer items have proved that the backstand method is more efficient and more economical than the set-up wheel.

If you grind, polish or finish flat or contoured surfaces, stamped, cast or forged pieces, send today for free booklet, "Facts About Backstand Belt Grinding and Polishing."

We recommend buying through your industrial distributor

ARMOUR *Coated Abrasives Division*

SHEETS • ROLLS • BELTS • DISCS

Armour and Company • North Benton Road • Alliance, Ohio

BREVITY—Identify by IEN - 9444 if you write the maker

GET THE FACTS NOW!

Potter

HIGH SPEED ELECTRONIC

PREDETERMINED COUNTERS

For these applications:
- AUTOMATIC MACHINE CONTROL
- PACKAGING BY PREDETERMINED COUNT
- LINEAL MEASUREMENTS
- FREQUENCY MEASUREMENTS
- TIME INTERVAL CONTROL

The ONLY counter with ALL these features!
- COUNTS AT RATES UP TO 60,000 PER MINUTE
- ABSOLUTE ACCURACY
- INSTANTANEOUS AUTOMATIC RESET
- NO MOVING PARTS, FRICTION OR INERTIA
- SIMPLE DIAL SELECTION OF COUNT

Potter Predetermined Electronic Counters extend the field of automatic counting and control far beyond the scope and capabilities of existing mechanical and electromechanical devices. There are no moving parts — therefore, wear, slippage and inertial effects are eliminated.

Although the standard models count at rates up to 60,000 per minute, counters capable of counting at higher rates are available.

A complete line of photoelectric and electromagnetic detectors, for counting any material or action, can be supplied.

The instruments are easily applied to any problem requiring the precise measurement or control of QUANTITY, LENGTH, TIME, FREQUENCY, REVOLUTION or CAM SEQUENCE. Absolute accuracy of count is guaranteed.

Write today for an accurate appraisal of your counting, timing or control problem. Fill out the handy coupon.

POTTER INSTRUMENT CO. INCORPORATED
115 CUTTER MILL ROAD, GREAT NECK, N. Y.

Gentlemen:
I am interested in the items checked. Please send complete information at once. 7-V

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ ZONE _____ STATE _____

- ☐ COUNTING
- ☐ PACKAGING
- ☐ SORTING
- ☐ BATCHING
- ☐ MACHINE CONTROL
- ☐ TIMING
- ☐ PROCESS CONTROL
- ☐ FREQUENCY MEASUREMENT

BREVITY—Identify by IEN - 9446 if you write the maker

WIRE ROPE FITTING . . Thimble clamps in place, 3/8 to 7/8 in. sizes

Source: NEWMAN MFG. CO.
207 Westport Road, Kansas City 2, Mo.

Two steel castings making up this new fitting are joined by four bolts to engage an end loop on a wire rope. The unit will hold for loads about equal to the ultimate strength of the rope which threads through from the inside, lies in a groove around the end and threads back inside.

Overall length of the fitting is 5 to 10¾ inches. Outside diameter of the loop is about 2½ to 5½ inches. The loop opening will clear 1 to 2 inches. Weight is 2 to 12 pounds.

BREVITY—Identify by IEN - 9447 if you write the maker

TRANSFORMER . . Dry type design, Class H insulation, rates to 3,000 kva.

Source: PENNSYLVANIA TRANSFORMER CO.
P. O. Box 330-A, Canonsburg, Pa.

Ventilated and sealed designs

New line of dry-type transformers has been developed for station auxiliary, unit substation and network service. Ventilated and sealed-in-nitrogen units are available, the former in ratings to 3,000 kva. and to 15 kv., the latter in ratings to 2,000 kva. at 15 kv. and below.

The design is fire resistant, explosion resistant, moisture repellent, heat stable. The Class-H insulation consists of inorganic materials such as glass, porcelain, asbestos, bonded or impregnated by silicone resins or rubbers or by fluorocarbon resins. The insulation has about 100 deg. C. temperature advantage over Class B.

BREVITY—Identify by IEN - 9448 if you write the maker

CONVEYING . . Flexible belt design curves horizontally into a box car

Source: FLEXOVEYOR MFG. CO.
1218-22 S. Acoma St., Denver 10, Colo.

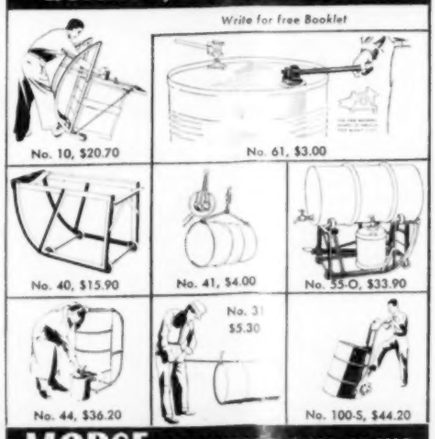
A series of endless-spring belts operates over grooved steel rollers in the connected sections of this new wheel-mounted conveyor. It is equipped with a tray-type slide at the delivery end. It rides under a straight belt-conveyor section at the loading end. Bags can be loaded on the feed conveyor to drop to the flexible section for handling into a box car. As loading proceeds the flexible conveyor can be retracted and curved as required. It will handle 30 filled bags per minute.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 9449 if you write the maker

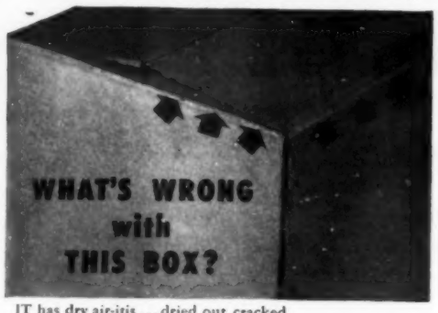
MORSE DRUM AND BARREL HANDLING EQUIPMENT FOR QUALITY, PRICE, SERVICE

Write for free Booklet



MORSE *MANUFACTURING CO. INC.*
123 Dickerson Street Syracuse 2, N. Y.

BREVITY—Identify by IEN - 9450 if you write the maker



IT has dry air-itis . . . dried out, cracked at the creases, strength reduced. It's no longer a suitable shipping container. Low wintertime humidities are hard on all of your paper boxes and packaging materials.

Moreover, dry air causes warping, wavy stock, off-register printing and scoring troubles.

Automatically controlled humidification with economical Armstrong Steam Humidifiers prevents all this simply by adding steam directly to the air. They often repay their cost in one heating season. Available from stock, ready for easy installation. Write today.

SEND FOR BULLETIN 1772
Complete information includes illustrations, diagrams, data, prices, etc. Write:

ARMSTRONG MACHINE WORKS
888 Maple Street • Three Rivers, Michigan

BREVITY—Identify by IEN - 9451 if you write the maker

- REDUCE LOAD BREAKAGE — Big, burly Mono-Cushions soak up shock without sacrificing stability, save plenty of money in moving fragile loads.
- REDUCE MAINTENANCE — Mono-Cushions soak up so much shock and shock load that they reduce maintenance on bearings, steering linkages and driving trains as much as 40%.
- REDUCE FLOOR WEAR — Easy-going Mono-Cushions protect floors from the pounding of heavily laden trucks, cut floor maintenance costs.

THE MANUFACTURER OF YOUR VEHICLES can supply you, through his service branches, with the type of Monarch Tire engineered for your equipment.

THE MONARCH RUBBER COMPANY
201 LINCOLN PARK HARTVILLE, OHIO

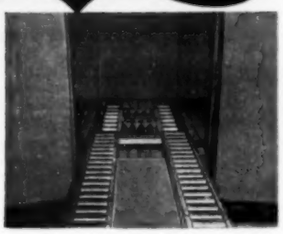
SPECIALISTS IN INDUSTRIAL SOLID TIRES AND MOLDED MECHANICAL RUBBER GOODS

BREVITY—Identify by IEN - 9453 If you write the maker

Cut Loading Time in HALF!

WITH **ISLAND PALLET DOLLIES**

Puts an end to the pallet handling problem.



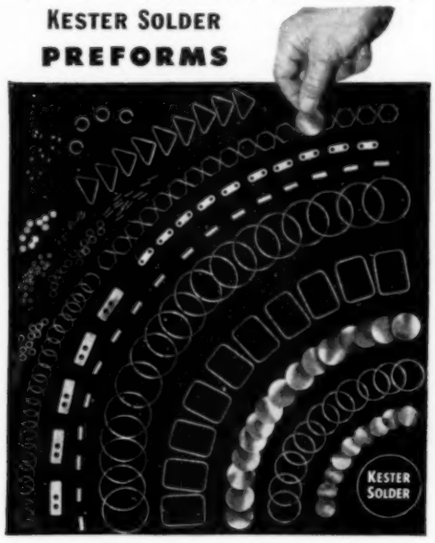
Fork trucks can't enter a reefer car! That's where the Pallet Dolly takes over. Staggered bottom rollers eliminate trouble from floor racks. Has 14 gauge rollers on 4" centers... 2 x 2 x ¼ angle frame... built to handle your pallet... all parts are standard equipment. Write for detailed bulletin RTD-1 A.

Dept. IE-9.

ISLAND EQUIPMENT CORP.
27-01 Bridge Plaza North
Long Island City 1, New York

BREVITY—Identify by IEN - 9454 If you write the maker

KESTER SOLDER PREFORMS



Use Kester *Soft Solder* Preforms for flame, oven, and induction soldering. Write today for samples and complete information.

KESTER SOLDER COMPANY
4201 Wrightwood Ave., Chicago 39 • Newark, N. J. • Brantford, Canada

BREVITY—Identify by IEN - 9455 If you write the maker

Another Automatic Achievement

CLEVELAND tapping machines lead screw

A CLEVELAND TAPPER set up on a munitions job, tapping a 1 15/32", 10-pitch Buttress thread in SAE 4143 steel tubing hardened to 35 to 37 Rockwell.

CLEVELANDS in the Defense Program

Watch a Cleveland Tapping Machine in action for a few minutes . . . tapping two 20 mm. shells every 6.1 seconds . . . turning out 3.5 rocket bodies at the rate of 100 pieces per hour . . . and you get the idea that the front line of democracy is a lot closer than you think. *We cannot afford to waste a man hour which could be more effectively spent for defense production.* Cleveland engineers design and build ingenious machines which not only combine several operations but also tap groups of holes at one stroke of the machine. *Cleveland Tappers save valuable working time and cut production costs.* Find out about them.

Meet Mr. Lead Screw...

of The Cleveland Tapping Machine Co. Mr. Lead Screw symbolizes the time-proved lead screw feed designed and pioneered by Cleveland . . . now generally accepted as the key to precision tapping at high speeds. Write for your copy of the Cleveland Production Tapping Guide and a copy of Catalog Y-6.

THE CLEVELAND TAPPING MACHINE CO.
A Subsidiary of AUTOMATIC STEEL PRODUCTS, INC.
CANTON 6, OHIO

BREVITY—Identify by IEN - 9456 If you write the maker

MOTOR CONTROL . . Magnetic starter for squirrel cage motors, non-reversing

Source: EUCLID ELECTRIC & MFG. CO.
55 Edwards St., Madison, Ohio

Bulletin 5301 is a new combination motor starter for full voltage service with squirrel-cage motors and as a primary switch with wound-rotor induction motors. Assembly includes a three-pole fused or un-fused manual disconnect switch, a magnetic across-the-line starter, thermal overload relays, pilot, circuit-holding contacts for use with "start-stop" pushbutton controls. The unit provides low voltage and overload protection when used with the start-stop controls.

Low voltage release is obtained when used with a two-wire pilot circuit device such as a float switch. The fused disconnect switch provides short circuit protection. The thermal overload relays and magnetic starter element provide inverse time overload protection. The starter is available in size 0 to size 4. Size 0 dimensions overall are about 10 by 6½ by 24¼ in. for the complete assembly.

BREVITY—Identify by IEN - 9457 If you write the maker

PACKAGING . . Latex bound fibres, die cut to protect delicate equipment

Source: QUEEN CITY TULATEX CORP.
51 Pine St., Burlington, Vt.

Please note our error

We call your attention to the dimension error in our description of the company's new packaging material in IEN-6953-51. We quoted sheet sizes to 16 by 80 inches. This should have read to 60 by 80 inches.

BREVITY—Identify by IEN - 9458 If you write the maker

DISPENSING . . Counter and reel to measure, coil, electric cable, rope

Source: HY KON MFG. CO.
165 E. State St., Alliance, Ohio

Measured length of wire rope, electric cable or wire in diameters from ⅝ to 1½ in. can be drawn out and wound in convenient coil form on a combination of meter and cable reel which the company has developed. The cable is drawn through a stand underneath a roller that drives a counter to measure the length. It is wound onto a reel that can be collapsed to withdraw the finished coil without dropping it. The counter and its adjustable stand list at $210, the reel and supporting stand at $100.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 9459 If you write the maker

seamless – welded
carbon – alloy – stainless

TUBING SATISFACTION for ALL

pressure and mechanical requirements

B&W SEAMLESS and WELDED TUBES

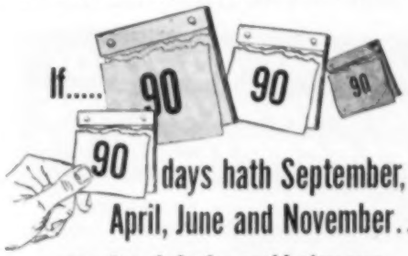
A good man to know

. . . Your B&W Tube Representative . . . **because his factory training in "tube-technics", and specialized knowledge of applications may help you to uncover tubing economies in buying and applying carbon, alloy and stainless grades.**

THE BABCOCK & WILCOX TUBE COMPANY
General Offices: Beaver Falls, Pa.
Plants: Alliance, Ohio, and Beaver Falls, Pa.

Sales Offices: Alliance, Ohio • Beaver Falls, Pa. • Boston 16, Mass. • Chicago 3, Ill. • Cleveland 14, Ohio • Denver, Colo. • Detroit 26, Mich. • Houston 2, Texas • Los Angeles 15, Calif. • New York 16, N. Y. • Philadelphia 2, Pa. • St. Louis 1, Mo. • San Francisco 3, Calif. • Syracuse 8, N. Y. • Montreal, Quebec • Tulsa 3, Okla.

BREVITY—Identify by IEN - 9460 If you write the maker



days hath September, April, June and November...

your Royal dealer could give you 'One-month' delivery... maybe!

Why does it take so long to get delivery on Royal furniture? Here are four very good reasons...

1. Government purchasing demands have increased.
2. Material shortages and restrictions have developed.
3. D.O. orders take priority over non-defense production.
4. The overwhelming increase in Royal's popularity on today's consumer market!

If you can wait... you'll be wise to wait for Royal!

Royal
METAL FURNITURE SINCE '07

ROYAL METAL MANUFACTURING COMPANY
175 NORTH MICHIGAN AVENUE • CHICAGO 1
New York • Los Angeles • Michigan City, Ind. • Warren, Pa. • Preston and Galt, Ontario

BREVITY—Identify by IEN - 9461 If you write the maker

PROBLEM

How to Conserve or Replace Nickel in Radio Tube Parts?

GENERAL PLATE

Provided the Solution with Aluminum Clad Iron... *A Composite Metal.*

Europeans, faced with a critical nickel shortage during World War II, conserved large amounts of nickel by using an aluminum clad iron as a radio tube anode material.

With today's increasing nickel shortages, radio tube manufacturers are faced with a similar problem. General Plate has provided a solution by developing techniques which enable it to provide aluminum clad iron material for use in radio tube applications.

No matter what your metal problem, it will pay you to consult General Plate. Their vast experience in cladding precious to base metals, or base to base metal combinations can overcome your problems . . . often reduce costs as well.

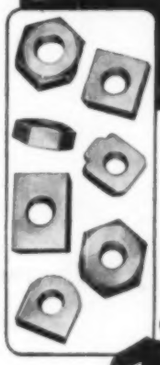
General Plate Products include . . Precious metals clad to base metals, Base metals clad to base metals, Silver Solders, Composite contacts, buttons and rivets, Platinum fabrication and refining, Age-hardenable #720 Manganese Alloy. Write for information.

GENERAL PLATE
Division of Metals & Controls Corp.
79 Forest Street, Attleboro, Mass.

BREVITY—Identify by IEN - 9462 If you write the maker

Where machine screws and studs are used— Pheoll

MACHINE SCREW NUTS fit and look better in completed assemblies



Improve product appearance, join parts faster, use Pheoll hexagon, square, and special machine screw nuts. Made in steel or brass, they are tapped straight for snug, tight fits. Faces are held to accurate dimensions and meet rigid inspection requirements.

Standard listed sizes of hexagon and square, steel and brass machine screw nuts are carried in stock. Extra sizes, both single chamfered—single countersunk and double chamfered—double countersunk are stock items. Machine screw nuts in different metals made to order. Semi-finished hexagon steel and brass nuts are stock items.

Write for complete information, specifications and prices.

ADDITIONAL PHEOLL PRODUCTS
Wing Nuts • Tapping Screws
Knurled Nuts • Wood Screws
Cap Nuts • Machine Screws
Machine Bolts • Cap Screws

Pheoll MANUFACTURING COMPANY • 5700 Roosevelt Road Chicago 50, Illinois
SCREWS • BOLTS • NUTS *Industrial Fasteners and Holding Devices*

BREVITY—Identify by IEN - 9463 if you write the maker

Now! CONTROL AIR OPERATIONS ELECTRICALLY!

PUSH BUTTON OR LIMIT SWITCH CONTROL FOR

- AIR CYLINDERS
- AIR CIRCUITS
- AIR-OPERATED PRESSES

Quiet . . . dependable . . . economical. Unlimited range of applications. Ideal for remote control or for building into equipment. Two types. Ask for Hannifin recommendations.

GET BULLETIN 230

Contains specifications, dimension table, wiring diagrams and other useful data.

HANNIFIN

Hannifin Corporation • 1107 S. Kilbourn Ave., Chicago 24, Ill.

BREVITY—Identify by IEN - 9464 if you write the maker

. . . There is always

One Best Way

TO MARK ANY PRODUCT

▶ There's always a best method of marking *any* product or material. There's also one piece of *equipment* that is best suited to making a mark by that method on *your* particular product.

Pannier is qualified by over 50 years' experience in developing and manufacturing equipment to meet *any* marking need, to recommend specific solutions to your marking problems . . . and supply proper machines to handle your marking in the most efficient and economical manner. Just let us know your requirements.

Get full data on these Pannier Products

- Steel Stamps & Dies
- Rubber Stamps & Dies
- Embossing Equipment
- Stencils & Supplies
- Branding Equipment
- Code Markers
- Production Marking Machines
- Industrial Marking Inks

OFFICES
Chicago, Los Angeles, Youngstown, Philadelphia, Jacksonville

THE PANNIER CORPORATION
101 PANNIER BUILDING
Pittsburgh 12, Pa.

BREVITY—Identify by IEN - 9465 if you write the maker

AUTOMATIC DRUM FILLER

Fills containers from 5 gallons up.

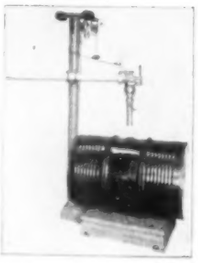
Operates from a lighting socket.

Handles any liquid.

Accuracy unaffected by air, vapor, sediment.

Fills to predetermined net weight.

Available in standard or explosion proof models.



Needs no temperature adjustment

A real time saver with heavy liquids

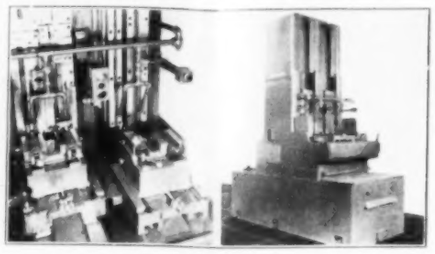
Ask for four page catalog "Automatic Drum Filling Valves"

THE VOL-U-METER COMPANY
BUFFALO 16, N. Y.

BREVITY—Identify by IEN - 9466 if you write the maker

BROACHING . . Duplex machine, hydraulic operation, 5 and 10 ton rating

Source: CINCINNATI MILLING MACHINE CO.
Marburg & Kline Sts., Cincinnati 9, Ohio



Individual tables in front of the two alternately-operating rams hold work fixtures, move forward by hydraulic pressure to present the work for cutting on the down stroke, retract to unloading position as the ram moves upward. These tables, together with refinement in the hydraulic circuit for pump and valve protection and inclusion as standard equipment of the Preset Cycle control, constitute improvements that have been made in the company's No. 5 and No. 19 vertical Hydro-Broach hydraulic broaching machine. No. 5 is available in 42 or 54-in. stroke. No. 10 provides 54 or 66-in. stroke.

Preset Control centers at a push button mounted in a box extending forward from the side of the housing about shoulder high for the operator. He can press this button to initiate start of the next cycle for either ram if he has unloaded and loaded the corresponding fixture while the ram is returning upward. If his operations have not been completed he does not press the button and the ram stops at the top of the stroke until he is ready to start it downward again.

BREVITY—Identify by IEN - 9467 if you write the maker

PULLING . . Flexible packing hooks remove old packing from stuffing boxes

Source: GARLOCK PACKING CO.
50 Garlock St., Palmyra, N. Y.

The screw tips in the company's flexible-shank packing hooks, previously described IEN-8310-50, are now removable from the flexible shanks so they can be replaced if they become damaged. The new design makes it unnecessary to discard the assembly because of a damaged or broken tip.

Hooks and accessories in a complete set include two flexible units, 6¼ in. in length, with 5/16 and 7/32-in. screws for stuffing boxes where the packing space is as small as ¼ in., one extra screw tip, two flexible hooks 10⅝ in. in length with ¼ and 5/16-in. screws for stuffing boxes where the packing space is not less than ⅜ in. and an extra tip, one double-end packing tool 12 in. in length with a pick on one end and a hook on the other, one solid packing hook 8-in. in length, one wrench and a metal tool box.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9468 if you write the maker

MUSIC TO OUR EARS!

"An International Retractable Anvil Staple Machine will do the trick, boss. Neater cartons, stronger closures, reduced damaged claims . . . but the 'clincher' lies in the cold cash saved!"

"Think of this . . . faster carton closing, one operator takes care of a plant's entire output, no space lost by assembled empty cartons . . . in many cases these all add up to savings of 50% or more."

Will you give one of our representatives the opportunity to prove these claims to your complete satisfaction?

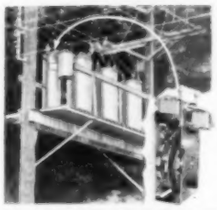
INTERNATIONAL STAPLE & MACHINE COMPANY
HERRIN 5, ILL.

DISTRIBUTORS IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 9469 if you write the maker

RUGGED...

Reversible BARCOL Motor Drives Voltage Regulator



Three-Wire Reversible *Barcol* Geared Motor drives tap changer in Allis-Chalmers JFR voltage regulator. Motor is designed to operate completely immersed in transformer oil over wide temperature range and under rapidly varying loads.

Other Applications for Barcol Low-Inertia *FAST-REVERSING* Motors:

- SERVO MECHANISMS
- TELEVISION TUNERS
- RADIO TUNERS
- ANTENNA ROTATORS
- RECORDER PEN DRIVES
- X-RAY CONTROLS
- pH CONTROLLERS
- SHIPS' LOGS
- AIRCRAFT TRAINERS

OTHER REVERSIBLE SHADED POLE MOTORS:

With and without Gear Reductions.

Enclosed and Open.

Adaptable to 2-Phase power supply, capacitor operation and electronic control.

Write for Catalog

Other Barcol Motors: Unidirectional, Synchronous, and Asynchronous; Geared and Non-Geared. Write for data.

BARBER-COLMAN COMPANY • ROCKFORD, ILLINOIS

BREVITY—Identify by IEN - 9470 if you write the maker

LIKE AN ATOM-IC EXPLOSION

Just ONE 1/32" pin-hole size faucet LEAK MUSHROOMS into ATOMIC WASTE of approximately 76,000 gallons of water yearly—COSTING: $10.13 a $1 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 76,000 gallons costs approximately:

$27.65 if coal (7,900 lbs.)
$38.00 if oil (633 gals.)
$50.63 if gas (63,500 cu. ft.)

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with "SEXAUER" "EASY-TITES" that outwear ordinary faucet washers 6-to-1; thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D. **"EASY-TITE"**

Faucet washers

...a modern laboratory triumph, are compounded from du PONT NEOPRENE instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day super-heating water systems—that formerly broke down washer's structure (tested to withstand 300°F.)

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape...causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold TAPS—thus you slash water, fuel and labor costs.

THE NEW 'SEXAUER' CATALOG, Edition F, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. Send for your copy today!

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and *without obligation.*

A postcard will bring him and your NEW Catalog F promptly.
J. A. SEXAUER MFG. CO., INC., Dept. K-91
2503-05 Third Avenue, New York 51.

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

as advertised in THE SATURDAY EVENING POST

BREVITY—Identify by IEN - 9472 if you write the maker

EVERYONE SEES YOUR NAMEPLATE !

MARK IT LEGIBLY

The nameplate you use to identify your product should supply vital information marking clearly, legibly, speedily and economically . . . with a Matthews Nameplate Marking Product.

BY HAND For limited production . . . A range of marking equipment from steel hand stamps and type holders to hand-operated devices.

BY MACHINE For fast production . . . Semi- and fully-automatic marking machines; or holders to fit your present press equipment.

SEND FOR THIS BOOKLET

BULLETIN B-6 . . . an encyclopedia of Matthews Nameplate Marking Equipment to solve any problem.

JAS. H. MATTHEWS & CO.
3948 FORBES ST. • PITTSBURGH 13, PA.
NEW YORK • BOSTON • PHILADELPHIA
CHICAGO • CLIFTON, N. J.

BREVITY—Identify by IEN - 9473 if you write the maker

NO HANDS NEEDED

TO SCRAPE GREASE AWAY!

You save costly man-hours when you use Penetone's SAFE liquid degreaser, NAVEE '42. This non-explosive, non-toxic chemical *melts* away the toughest deposits in a few minutes.

Use NAVEE '42 to dissolve hardened fuel oil, diesel oil, asphalt, preservative greases, carbon stains and other hard-to-budge accumulations. Spray it on, brush it on, or use it in a tank without fear of overpowering fumes.

NAVEE '42 is a stock item at some of the country's largest industrial plants, airlines, shipping lines, and at scores of Army, Navy, Marine, and Coast Guard bases. Write today and we'll tell you how this amazing chemical can save you man-hours and smooth production.

THE PENETONE CO.
BOX IEN-951 • TENAFLY, N. J.

BREVITY—Identify by IEN - 9474 if you write the maker

STOP watches

Yours free . . .

New 1951 catalog of internationally famous Clebar stop watches. Most complete line of stop watches in America . . . for every timing purpose.

In use by the foremost industrial firms, laboratories, colleges and athletic competitions.

MAIL COUPON TODAY!

Clebar Stop Watches meet and exceed the rigid specifications of the National Bureau of Standards!

CLEBAR Watch Agency

Clebar Watch Agency
Dept. N, 521 Fifth Avenue • New York 17, N. Y.
Please rush me a FREE copy of the new 1951 catalog of the internationally known Clebar Stop Watches.
Name
Address
City State

BREVITY—Identify by IEN - 9475 if you write the maker

LIGHTING . . Aluminum holder for sealed beam spot and flood lamps

Source: GUARDIAN LIGHT CO.
299-303 Lake St., Oak Park, Ill.

Two sizes are available in a new lamp holder that features a spring-backed socket for 150, 200 and 300-watt sealed-beam spot and flood lamps. The socket arrangement permits good electrical contact and provides a snug fit of the lamp to the lamp holder rim to prevent breakage due to changes in temperature or because of minor physical variations. The lamp is supplied wired and equipped with a stem having a ½-in. pipe thread for connection to a conduit fitting.

BREVITY—Identify by IEN - 9476 if you write the maker

ADHESIVE . . Synthetic resin serves as a binder for foundry cores

Source: GENERAL ELECTRIC CO.
101 Plastics Ave., Pittsfield, Mass.

Sample available upon request

GE-12353 is a new liquid phenolic resin for use in molding sand cores. It requires only a short baking cycle. Its use minimizes sand "burn in" on the finished castings. Core collapsibility is excellent to provide easy shake out. Low gas formation and high gas permeability are characteristic of the finished cores.

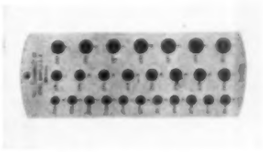
Application starts by adding water and mulling thoroughly with the core sand. Baking is at about 375 deg. F. For most applications 0.5 percent resin weight to sand weight makes a good mixture. Ultimate tensile strength of about 190 lb. per square inch occurs after 45 minutes of baking.

In addition to use as a binder for cores, the resin can be sprayed after diluting with four parts of water to increase the hardness of oil or resin-bonded cores. The spray penetrates to about ⅛ inch. The resulting hard shell resists penetration of metal and protects the cores from breakage in handling.

BREVITY—Identify by IEN - 9477 if you write the maker

GAGE . . Drill plate for use with letter size drills, A to Z

Source: L. S. STARRETT CO.
100 Starrett St., Athol, Mass.



No. 198 is a new hardened and ground steel drill gage with 26 gaging holes of correct size for letter drills from A to Z having decimal equivalents between 0.234 and 0.413 inch. The plate is bright finished and checked after hardening. It measures a little over 6 in. in length.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9478 if you write the maker

POWELL
Job-Designed Handling Equipment
Cuts Handling 40-50%

If you are working with odd lengths . . . bars, tubing, extruded or rolled products . . . your handling problem is right down the alley for Powell **Job-Designed** materials handling containers. Powell equipment at work in plants handling long stock has cut handling and inventory costs as much as 50 percent. Contact your nearest Powell representative or write direct.

Faster delivery of your materials handling equipment is assured if you can furnish either a government D. O. number or the steel.

Send inquiries to Dept. 691

THE POWELL PRESSED STEEL CO. • HUBBARD, OHIO
ORIGINATORS OF COLD FORMED ALL STEEL HANDLING EQUIPMENT

BREVITY—Identify by IEN - 9479 if you write the maker

STOP HYDROSTATIC PRESSURE LEAKS

THROUGH CRACKS or HOLES IN UNDERGROUND WALLS with

SEEP-SEAL

STOPS THE LEAK IN 2 MINUTES

Water seepage, even hydrostatic pressure leaks, commonly found in underground concrete structures, are no longer a difficult problem to overcome. A simple, quick and most effective remedy is found in Seep-Seal. This amazing new formula, mixed with Portland cement, and inserted in any crack or actual hole in concrete, will set within 2 MINUTES to shut off ALL leakage. Ideal for manholes, elevator pits, reservoirs, subways, mine-shafts and similar structures. Also widely used in plaster-consistency for damp-proofing floors and walls.

Write for complete details and prices today. Immediate shipments

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 5

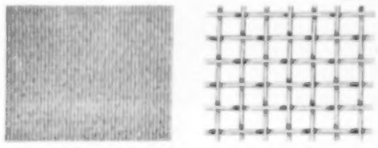
BREVITY—Identify by IEN - 9480 if you write the maker

WOVEN WIRE

Roebling makes a complete range for every industrial need

FROM FINEST FILTER CLOTH to toughest aggregate screen, the Roebling line of woven wire products brings maximum efficiency . . . exceptional service life and dollar-savings. And that's because Roebling offers you exactly the right weaves and constructions for your particular operations . . . combined with wires made of special metals or alloys that will stand up best and longest under your individual working conditions.

Send for full woven wire information today.



WOVEN WIRE FABRICS DIVISION
John A. Roebling's Sons Company, Roebling, New Jersey

ROEBLING

BREVITY—Identify by IEN - 9481 if you write the maker

This FREE Manual Will Show You How Dy-Namic Balancing Fits Into Your Plant!

Vibration reduced . . . product performance improved . . . and mechanical failures eliminated. Three time-saving, money-saving reasons why Knapp-Monarch Company, St. Louis, has adopted "Bear" Dy-Namic Balancing as a regular production procedure. If you are not yet Dy-Namically Balancing all of your rotating parts . . . IT'S TIME TO INVESTIGATE. The new 24-page Bear Manual will give you all the up-to-date facts and will show you how others are using the latest "Bear" Dy-Namic Balancing Techniques for rotating parts of finished products and also in the maintenance of their own production machines and operating equipment. Write now for your Free Copy. Bear Mfg. Co., Dept. I-2, Rock Island, Ill.

"BEAR"
STATIC AND DY-NAMIC BALANCING MACHINES

BREVITY—Identify by IEN - 9482 if you write the maker

TAKE IT ANYWHERE!

BECKER
Self-Contained
SPRAY GUN
PRESSURE-POWERED *with* INEXPENSIVE CO_2 CARTRIDGE

ONLY **$15.95** *with three cartridges*

This completely portable spray gun is saving money in many industrial uses. Excellent for maintenance operations. Requires no compressor, motor, or electrical outlet. Has 21 liquid ounce capacity, heavy-gauge steel container; cast aluminum head; brass and stainless steel inserts. Low cost CO_2 cartridge sprays up to one container full, depending on viscosity. Use it for paint, varnish, enamel, oil, fire-proofing, rust-proofing, disinfecting. If your industrial distributor can't furnish, order direct and we will ship postpaid. (Extra CO_2 cartridges 10 for $1, postpaid, or buy them from your local dealer.)

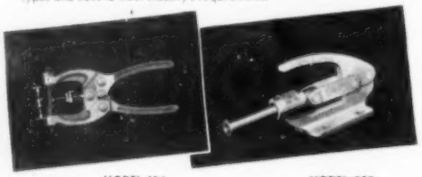
SULLIVAN BECKER CO. • DEPT. 191-J, KENOSHA, WIS.

BREVITY—Identify by IEN - 9483 if you write the maker

If you have to HOLD

ANYTHING in your production operations

Hold EVERYTHING with "DE-STA-CO" Toggle Clamps in welding, riveting, bonding, machining and assembly. • Fast clamping, positive holding pressures, instantaneous release—Toggle Clamps speed up your operations and cut your costs. • There are more than 40 different Toggle Clamps manufactured by Detroit Stamping Company in various types and sizes to meet industry's requirements.



MODEL 424 PORTABLE PLIER CLAMP
For one-hand use in cramped work areas and small space. Deep jaw capacity but only 4½" in length.

MODEL 650 HEAVY DUTY PLUNGER CLAMP
For "push-pull" work-holding jobs where considerable pressure is needed. Compact; up to 4000 lbs. capacity.

MODEL 235-U RETRACTABLE CLAMP (Not illustrated)
Quick, unimpeded loading and unloading of fixtures easily possible with this one. Up to 750 lbs. pressure.

Ask for "DE-STA-CO" Toggle Clamp Catalog and name of representative nearest you who is stocking our entire line of Toggle Clamps.

DETROIT STAMPING COMPANY
342 MIDLAND AVE. • DETROIT 3, MICH.

BREVITY—Identify by IEN - 9484 if you write the maker

TEMPILSTIKS°

the amazing Crayons that tell temperatures

in
WELDING
FLAME-CUTTING
TEMPERING
FORGING
CASTING
MOLDING
DRAWING
STRAIGHTENING
HEAT-TREATING
IN GENERAL

$2 each

gives up to 2000 readings

it's this simple:
• Select the **Tempilstik°** for your working temperature.
• Mark your workpiece with it.
• The **Tempilstik°** will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)

113	213	313	450	850	1250	1650
125	225	325	500	900	1300	1700
138	238	338	550	950	1350	1750
150	250	350	600	1000	1400	1800
163	263	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

Also available in pellet and liquid form.

TEMPIL CORPORATION
132 W. 22nd St., New York 11, N. Y.

FREE—Tempil° "Basic Guide to Ferrous Metallurgy" —16½" by 21" plastic laminated wall chart in color. Send for sample pellets, stating temperature of interest to you.

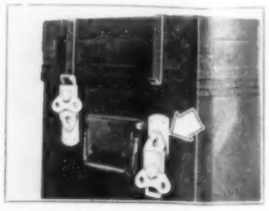
NAME _____
COMPANY _____
ADDRESS _____

BOOTH C-117 — NATIONAL METALS SHOW
DETROIT, OCTOBER 15-19

BREVITY—Identify by IEN - 9485 if you write the maker

FASTENING . . Slide type latch locks over center in holding position

Source: SIMMONS FASTENER CORP.
1010 N. Broadway, Albany 1, N. Y.



Link-Lock is a new slide-type latch capable of exerting 450 lb. of pull-down pressure when turned to locking position. It rates 1,000 lb. in tension. The material is heat treated alloy steel. The slide and locking action are obtained by off-center pin connection with the operating bolt which moves a little beyond center between release and holding positions.

The hinged wing with which the bolt is turned lies normally in flat position. It can be locked in this position by an additional screw which is supplied when specified. The wing measures 2⅝ in. in width. Overall latch length in locked position is about 4¾ inches. Body width is 1½ inches. Height above the mounting surface with the wing lying flat is ¾ inch. Slide travel is $\frac{5}{16}$ inch.

BREVITY—Identify by IEN - 9486 if you write the maker

DRIVE . . Hydraulic fluid is non-inflammable, also will lubricate

Source: R. M. HOLLINGSHEAD CORP.
830 Cooper St., Camden 2, N. J.

Booklet H-2 presents details

Hydraulic Fluid H-2 is a new water-glycol mixture with additives to inhibit corrosion, arrest galvanic action, provide lubricity and act satisfactorily at both high and low temperatures. The new fluid is comparable with AN-O-366 aviation hydraulic fluid in the ratio of 90 percent H-2 to 10 percent 366. In these proportions the operating range is between minus 60 and plus 160 deg. F. The formulation can be altered to raise the top temperature limit for applications where extreme low-temperature requirements are not critical.

BREVITY—Identify by IEN - 9487 if you write the maker

CONSTRUCTION . . Power shovel tractor mounted, rates 5 cubic feet

Source: MEAD SPECIALTIES CO.
4112-16 No. Knox Ave., Dept. HL-38, Chicago 41, Ill.

High-Lift M-6 is new assembly of the company's Mighty Mouse tractor, previously described IEN-2625-50, and a 5-cu. ft. bucket. Load capacity of the new High-Lift unit is about 500 lb. with balancing weight placed in the tray back of the driver's seat. The distance between the lower edge of the bucket and the ground at maximum height is about 7 feet.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

BREVITY—Identify by IEN - 9488 if you write the maker

NEW FEATURES—*NEW* ADVANTAGES BALDWIN TYPE "L" INDICATOR

Designed for use with SR-4® gages; gage factors of 1.77 to 2.20. Battery-operated; connector available. Ask for Bulletin 312.

- **INCREASED CONVENIENCE.** Each step increased to 20,000 microinches, in.
- **GREATER BALANCING RANGE.** Range Extender doubled to 20,000 microinches.
- **ADDED ADAPTABILITY.** Binding post connections for external bridge.
- **INCREASED VERSATILITY.** Oscillograph for special problems.

BALDWIN-LIMA-HAMILTON CORPORATION
PHILADELPHIA 42, PA.

Offices: Chicago, Cleveland, Houston, New York, Philadelphia, Pittsburgh, San Francisco, St. Louis, Washington.

BALDWIN-LIMA-HAMILTON

BREVITY—Identify by IEN - 9489 if you write the maker

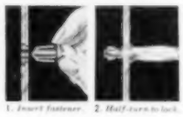
This fastener works through thick and thin!

Spring-Lock works whether panel thicknesses run over or under specifications! Spring wire deflects automatically to handle greater or lesser thicknesses. Spring-Lock's design flexibility makes it more than a fastener: it can be adapted as a shelf support, door strike, knob or any similar panel-mounted device. Many standard shapes and sizes of Simmons Spring-Locks are available from stock.

SIMMONS FASTENER CORPORATION
1758 North Broadway, Albany 1, N. Y.

Spring-Lock • Quick-Lock • Roto-Lock

HERE'S HOW SPRING-LOCK WORKS



1. Insert fastener. 2. Half-turn to lock.

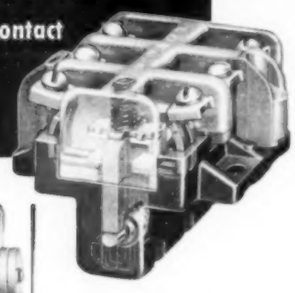
- **Installation is BLIND**
- **Installation is EASY: no special tools are needed**
- **Installation is QUICK: a half-turn locks it in place**
- **Installation is SECURE: the *spring* steel *locks* the fastener, resists vibration**

Send for details and samples, or write us about your fastening problem.

BREVITY—Identify by IEN - 9490 if you write the maker

A new line of CUTLER-HAMMER SWITCHES

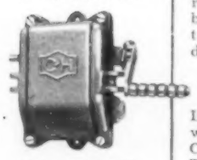
utilizing an identical common contact structure



ROLLER LEVER SPRING RETURN TRACK TYPE SWITCH

FORK LEVER TWO POSITION TRACK TYPE SWITCH

Track type switches have clamp-on operating lever to mount at any angle on shaft, also on opposite end of shaft for opposite side track installation. Operated in both directions. Cast iron NEMA 1 Standard, NEMA 4 Watertight or NEMA 7 Dustlight enclosure. Tapped for conduits. Two pole or three pole with contacts normally open and/or normally closed, with or without overlap. 1.25 amps at 250 volts etc.



FOOT OPERATED MASTER SWITCH

Double pole, two wire remote control, hold down type. Double break contacts, normally open, convertible to normally closed or normally open and normally closed. Cast iron, split type. NEMA 1 Standard, NEMA 4 (Dustlight) or NEMA 7 (Class I, Group D).

CUTLER-HAMMER announces a new line of multi-purpose switches utilizing an all-new simplified identical contact structure. These switches are for use in the control circuits of automatic starters on a wide variety of machines such as woodworking, tire making, machine tools, steel mill equipment, hoists, conveyors, crane bridges, etc.

Features of the new contact structure include:

Standardized and interchangeable. This structure is identical with that used in other Cutler-Hammer limit switches, mill accessory switches, etc. It is completely interchangeable through the line and simplifies problems of spare parts and replacement.

Simplified. The contact structure is reduced to very simple elements. Easy to understand. Easily accessible. Easy to renew parts.

Sturdy construction. Cam and roller operated. Special alloy tips, arc-resistant molded supports, twin break contacts, etc. make this contact structure long lived and dependable. Small and compact.

Write for descriptive sheets on any of these switches. CUTLER-HAMMER, Inc., 1378 St. Paul Avenue, Milwaukee 1, Wisconsin. *Associate:* Canadian Cutler-Hammer, Ltd., Toronto, Ontario.

CUTLER-HAMMER
MOTOR CONTROL
C-H

BREVITY—Identify by IEN - 9592 if you write the maker

ARMSTRONG BROS.
Better PIPE TOOLS

Reversible Ratchet STOCKS and Adjustable DIES

Exceptionally convenient where space is limited, this stock simplifies pipe threading close to walls, in corners and wherever operating room is restricted. With adjustable dies (cut exact, over or under size threads) it is an ideal tool where valves and fittings are being installed or maintained.

"ARMSTRONG BROS." Adjustable Dies are of special Vanadium Tool Steel, have "backed-off" teeth, correct cutting angle, ample chip clearance and correct throat angle. They start and cut easily, hold their sharpness and "spin" off pipe without jamming or tearing threads.

Write for Catalog

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
5243 W. ARMSTRONG AVENUE • CHICAGO 30, ILL.

BREVITY—Identify by IEN - 9593 if you write the maker

Norgren MICRO-FOG LUBRICATORS

RELY ON

ACE
PRECISION
NYLON BALLS
FOR EXACT CONTROL

SIZES 1/8"–3/4"
TOLERANCES ±.001

C. A. Norgren Co., Denver, Colorado, uses Ace Nylon Balls as feed tube checks in Micro-Fog Lubricators to provide instant oil flow.

Request samples and bulletin TODAY!

Ace Nylon Balls of DuPont Nylon FM #10001 are mass produced to close tolerances giving you the advantages of toughness at low temperatures, form stability at high temperatures, light weight, chemical and abrasion resistance.

Hundreds of Industrial Applications! Let our engineers advise you.

ACE PLASTIC COMPANY
Precision Plastic Fabricators
91-24 Van Wyck Blvd. • Jamaica 2, N. Y.

BREVITY—Identify by IEN - 9594 if you write the maker

Announcing . . .

NEW ACME GAS MASK
with Triple-Utility Face Piece

Provides Chin-Style, Chest-Style or Hose-Mask Protection with One Face Piece

Write for illustrated bulletin describing this revolutionary development which simplifies your gas mask equipment. Get the full story today.

ACME PROTECTION EQUIPMENT CO.
3037 West Lake Street Chicago 12, Illinois

BREVITY—Identify by IEN - 9595 if you write the maker

ELEVATOR . . Truck tail gate rates 2,500 lb., electric motor drive

Source: B. M. QUINN CORP.
751 Industrial Ave., Lebanon, Ind.

Electric Liftman is a motor-driven tail gate for a truck. It has been on the commercial market for some time and now is offered to industrial organizations operating truck fleets. It consists of a platform 1½ in. in height that is guided up and down by structural members at two corners riding in guide housings that bolt to the truck body. Lifting and lowering action is by two cables passing over sheaves in the housings and back down to a motor-driven gear transmission that assembles under the truck body.

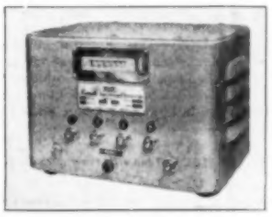
The motor is available for operation on 6 or 12-volt dc. to connect to the storage battery on the truck. Control centers at a pushbutton switch assembly on the end of an extension cord so the operator can stand beside the truck or ride up and down on the gate.

Three models in standard design range from 44 to 90 in. in width by 30 to 48 in. in depth. They install on trucks with floors not more than 42 in. above the ground for load capacity to 1,500 pounds. Three similar models in the same range of sizes apply on trucks having floors more than 42 in. from the ground. They rate 2,500 pounds. When the gate has been brought up to floor level it can be hinged upward to act as a normal tail gate on the truck.

BREVITY—Identify by IEN - 9596 if you write the maker

COUNTING . . Electronic equipment has speed to 20 counts per second

Source: GENERAL CONTROL CO.
1210-B Soldiers Field Road, Boston 34, Mass.



A single electronic decade and a Veeder Root six-digit electrically-operated counter are assembled in the housing of this new Post-Promatic electronic unit. The decade handles unit counts from 1 through 9 and actuates the Veeder-Root counter on each 10 impulses. With this arrangement the unit can be applied for a rate to 20 counts per second. Other assemblies are available to specification with additional decades in progressive ratio in which a two-decade-and-counter unit can be employed at a rate to 200 counts per second. Operation is on 110-volt 60-cycle ac.

Actuation is by a photoelectric head which the company also supplies or by other means to provide a counting impulse that will "trigger" the unit. A rate meter can be included to specification as an integral part to give a direct reading of the count rate in units per hour. Two designs of the standard assembly provide for accumulative count or for predetermined count. In the latter case the counter stops, signals and resets on reaching a desired total.

All Makers of These And All Other Products Are Listed in THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9597 if you write the maker

10-DAY DELIVERY!

SIMPLEST . . . MOST COMPACT

O-M AIR HYDRAULIC WATER CYLINDERS

Speed production, cut costs and save space with Ortman-Miller cylinders. Full range of sizes (1½" to 8" bores) now *available for early delivery*. All machined steel and bearing bronze. Interchangeable parts and mounting brackets. Write today!

FREE TEMPLATES
Shows the full line in ½ scale.
Request your free complete set now.

ORTMAN-MILLER
MACHINE CO., INC.
1208 150th Street • Hammond, Indiana

BREVITY—Identify by IEN - 9598 if you write the maker

NORTHERN HEAVY DUTY HI-LIFT HOISTS

For handling a lot of different loads in general purpose use, Northern Heavy Duty Hi-Lift Hoists will give you wider service per dollar of investment.

for safer, faster material handling at all times

Northern Cranes are designed and built to give you safer, faster overhead material handling at all times.

NORTHERN ENGINEERING WORKS
2615 Atwater, Detroit, Mich.

NORTHERN CRANES

BREVITY—Identify by IEN - 9599 if you write the maker

BARCOL

ELECTRIC OPERATORS FOR FACTORY GATES

Power-operated entrance gates to industrial plants are important for adequate protection and the proper control of traffic. The Barcol Electric Gate Operator, as illustrated above, is mounted in a weatherproof box at the side of the opening and attached by a chain at the correct points to insure smooth operation, with remote push-button control in the guardhouse. Barcol Operators are made for various types and sizes of such gates — let our representative give you the details.

FACTORY-TRAINED SALES AND SERVICE REPRESENTATIVES IN PRINCIPAL CITIES

BARBER-COLMAN COMPANY, 114 Mill St., Rockford, Ill.

BREVITY—Identify by IEN - 9600 if you write the maker

MANY INDUSTRIAL ROLL PROBLEMS are solved by using

SHAF-TITE* ROLLS

Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel plastic, etc. Whatever your roll problem, put it up to Rodney Hunt.

SEND FOR NEW CATALOG NO. 48
Most complete publication of its kind

Industrial Roll Division
RODNEY HUNT MACHINE CO.
175 Main Street, Orange, Mass.

*Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 9601 if you write the maker

LITTLE parts that can make a BIG difference in your products

Quadriga® SPECIAL STAMPINGS and WASHERS

Wear, noise and vibration in your products can be avoided by using Quadriga custom-fabricated washers and stampings—made to your *precise* specifications to suit your particular needs. Tension, spring, formed, drawn, cupped or finishing washers—any material you want quickly supplied. Also wire terminals. Stampings furnished in any design or material. Press capacity to 150 tons, depth of draw to 4". We build dies.

Send B/P, samples, or data for estimate and ask for new illustrated catalog.

THE QUADRIGA MANUFACTURING CO.

215-A West Grand Avenue Chicago 10, Illinois

BREVITY—Identify by IEN - 9602 if you write the maker

DESIGN FEATURES that mean BETTER HEATING of FLUIDS

WATLOW IMMERSION UNITS

Cylindrical shapes permit low watt density heat dissipation. Seamless-type round sheaths minimize scaling and provide for easy cleaning. Other types in curved flat or round shapes for maximum heating surface. Nickel alloy and stainless steel sheaths for corrosion resistance: ¼"—2" dia., 3½"—60" lengths, 10W-35 densities.

Send for the Watlow Electric Heating Units Catalog

SPECIALISTS IN ELECTRIC HEATING UNITS

WATLOW ELECTRIC MANUFACTURING COMPANY 1318 N. 23d St. St. Louis 6, Mo.

BREVITY—Identify by IEN - 9603 if you write the maker

Send for Your Copy...

Pyrometer Supplies Buyers' Guide No. 100-4

Today!

IT'S NEW! IT'S COMPLETE! IT'S YOURS FOR THE ASKING!

HERE's the brand new edition of the Brown Pyrometer Supplies Buyers' Guide . . . just off the press and designed to be even more helpful in your selection and ordering.

Included are standard and special thermocouple assemblies, elements and components . . . protecting tubes and covers . . . thermocouple and extension wire . . . valuable technical data and basic prices . . . and a host of other important information.

This buyers' guide is but part of the complete service available to you through your local *Honeywell Supplies Man* . . . with his HSM Plan for greater convenience and economy in all of your pyrometer supplies purchasing. Call him in for a discussion of your needs . . . he is as near as your phone. Write for your copy of this new buyers' guide today!

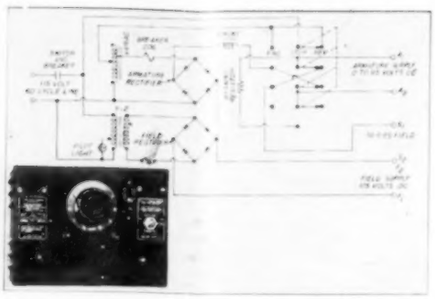
MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4456 Wayne Ave., Philadelphia 44, Pa.

Honeywell *Brown Instruments*

BREVITY—Identify by IEN - 9604 if you write the maker

DRIVE . . Variable speed control for ⅓ hp. dc. motor from an ac. line

Source: GENERAL RADIO CO. 273-77 Massachusetts Ave., Cambridge 39, Mass.



Type 1700-B is new design of the Variac speed control for ⅓-hp. motors, previously described IEN-7139-49. Selenium rectifiers are now employed in place of the rectifier tube used in the earlier model. Life tests on these new rectifiers indicate practically indefinite life expectancy for ordinary application. The field supply is now insulated from the armature circuit by a transformer so standard compound-wound motors, having five leads, can be reversed by means of the switch on the control.

Dynamic braking is obtained in the "stop" position although the motor can be stopped without dynamic braking if the ac. input switch is used. In either case starting is instantaneous and the short-period overload capacity is large so heavy loads can be started quickly. A time-delay magnetic circuit breaker protects in event of a stall.

Speed can be controlled from that rated for a given motor down to zero. The rise in speed between full load and no load, approximately 400 rpm., is about the same at all speeds. There are no torque pulsations and standard motors can be used at their full ratings. Shunt or compound-wound dc. motors rating 110 volts and operating within the continuous armature-current rating of 3.0 amp. can be used with the control. A motor with a commutating pole is preferable because improved commutation is obtained over the speed range.

Assembly is in a metal housing that measures about 12½ by 4½ by 9¼ inches. Weight is about 23½ lb. for the control and 30 lb. additional for the General Electric motor the company can supply. List price is $165. The motor adds $46.

BREVITY—Identify by IEN - 9605 if you write the maker

PAINTING . . Pocket information book on properties and uses of paints, varnishes, lacquers

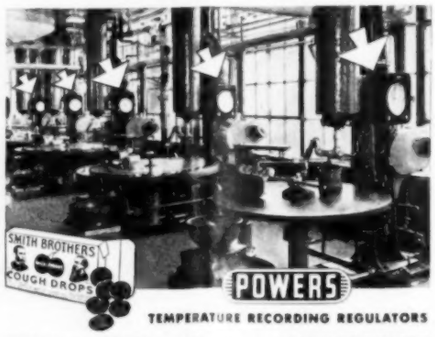
Heckel Publishing Co. 1522-26 Chestnut St., Philadelphia 2, Pa.

Answers to 78 questions on paint, 146 on varnish and 43 on lacquer are presented in new Tenth Edition of "Paint, Varnish and Lacquer Catechism," a 160-page pocket-size book that lists at $1. Topics include raw materials, ingredients, composition, manufacture, properties, test methods, uses, application methods, equipment care, troubles and remedies, trade terms and names.

Typical questions are what is an inert or reinforcing pigment, what are the characteristics of volatile thinners, what is "livering," what resins are used in lacquer manufacture, how is cellulose lacquer applied, what are plasticizers.

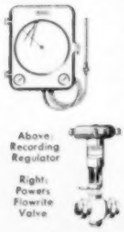
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9606 if you write the maker



TEMPERATURE RECORDING REGULATORS

Help Insure Uniform Quality at SMITH BROTHERS



Above: Recording Regulator

Right: Powers Flowrite Valve

For over 104 years Smith Brothers cough drops have been famous for their good flavor. Cooking operations here are accurately controlled and recorded by POWERS air operated regulators. They save labor and prevent losses caused by over-heating. Air conditioned packaging rooms also are Powers controlled.

When you want better temperature and humidity control for any process, heating or air conditioning system, contact our nearest office. There's no obligation. (a57)

THE POWERS REGULATOR CO.

Over 60 Years of Temperature and Humidity Control

SKOKIE, ILL. • Offices in Over 50 Cities • See Your Phone Book

BREVITY—Identify by IEN - 9607 if you write the maker

Many Industries Use

METLKOR

(Reg. U. S. Pat. Off.)

CYLINDER BRUSHES

—when ARRANGEMENT OF MATERIALS is required in manufacturing.

FOR EXAMPLE:

METLKORS raise loose threads from fabrics being sheared, to bring them to the knives; one of many textile uses.

METLKORS give suede leather its characteristic soft, even surface, arranging fibers in a uniform "pattern."

METLKORS move up to and hold certain materials in "cutting position."

HAVE YOU AN ARRANGING OPERATION TO PERFORM?

If so, consider these features of METLKOR Cylinder Brushes. They have:

CORES of aluminum, cold drawn steel, bronze, stainless steel that cannot sag or split, and are practically indestructible.
BRISTLE (including nylon) suited to the use intended. Renewable when worn.

OTHER METLKORS ARE USED FOR REMOVING AND APPLYING PURPOSES.

THE MOST ECONOMICAL BRUSHES YOU CAN BUY AND USE

Write for illustrated catalog about the METLKOR for your particular needs.

M. W. JENKINS' SONS, INC. P. O. Box 27 Cedar Grove Essex Co., N. J.

BREVITY—Identify by IEN - 9608 if you write the maker

BOOST OUTPUT with *Impact* AIR HAMMER

the efficient modern method for

PUNCHING . . . . RIVETING
ASSEMBLING . . EMBOSSING
FORGING . . . . . FORMING
PEENING . . . . . MARKING
CRIMPING . . . . . CUTTING
BLANKING . . . . . COINING

Ready . . . Mead's new air-powered Impact Hammer . . . weighing only 27 pounds . . . yet having a wallop like a pile-driver! One of its outstanding applications is multiple piercing of large metal sheets before or after forming. It can punch holes as close together as 1¾" on centers. Value of the impact readily adjusted from 4,500 pounds down to only a few ounces. Set ups are quick, easy. Besides innumerable punching operations, with suitable attachments it is capable of upsetting rivets, blanking out soft materials with knife dies, light coining, forging operations, etc. Get complete facts on this versatile, handy new tool and other Mead Air Power devices. Write for Catalog.

MEAD AIR OPERATED DEVICES save precious man-hours!

CATALOG READY

Send for copy of our new Air Power Catalog illustrating, describing many new man-and-money-saving devices.

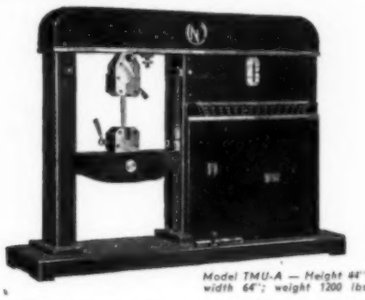
MEAD SPECIALTIES COMPANY

4114 NORTH KNOX AVENUE
DEPT. EA-91 • CHICAGO 41, ILL.

BREVITY—Identify by IEN - 9610 if you write the maker

It Will Pay You to Make Your Own Tests with

NATIONAL FORGE UNIVERSAL TESTING UNITS



Model TMU-A — Height 44"; width 64"; weight 1200 lbs.

The National Forge Universal Testing Machines are compact, accurate, dependable, easy to operate and moderately-priced.

Wide working clearances, long stroke, quick-action simplified variable-speed control, improved grips and a wide spread of load scale ranges adapt this modern, streamlined unit to production, research or school instruction tests of a great variety of materials and specimen sizes. A.S.T.M. accuracy requirements are guaranteed.

Three load scale ranges: Model TMU-A—0-30,000, 0-6000, 0-600 lbs. Model TMU-B—0-15,000, 0-3000, 0-300 pounds.

PROMPT DELIVERIES OF FEW UNITS REMAINING IN STOCK.

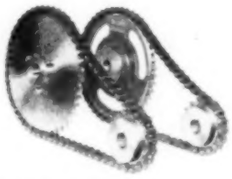
For details, write for Brochure 501.

TESTING MACHINE DIVISION

NATIONAL FORGE & ORDNANCE COMPANY

Dept. EN — Irvine, Warren County, Penna.

BREVITY—Identify by IEN - 9611 if you write the maker



CULLMAN

Sprockets and Roller Chain

STOCK OR SPECIALS

Utilize Cullman Sprockets and Roller Chains supplied promptly from Cullman's adequate stocks. Cullman Wheel Co. has been supplying high efficiency drives of low first cost and long service life throughout its 56 years of specialization in designing and manufacturing dependable transmission units and components. These factors are the common objective of machine designers and purchasers. Orders for specials are delivered quickly.

Send us your prints and we will quote promptly.

* * *

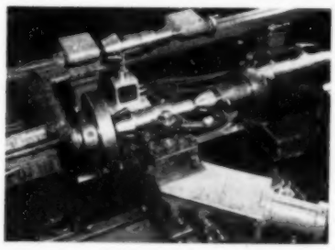
Many Cullman Distributors ready to serve you.

CULLMAN WHEEL COMPANY
1357 West Altgeld St.
Chicago 14, Illinois

CULLMAN *power transmission*
SPROCKETS and ROLLER CHAIN

BREVITY—Identify by IEN - 9612 if you write the maker

TURCHAN QUALITY CONTROL



Shop converts 1 lathe, then 10 more to hydraulic tracer control . . . .

A prominent manufacturer* of earth moving equipment now using Turchan Follower Attachments, saves up to 80% in costs! Need for special form tools is eliminated. Set-up time is greatly reduced. Closer accuracies (to .001") avoid rejects. The Turchan unit replaces the conventional cross slide and operates at a 45° angle to the work axis. Hydraulically controlled cutting tools take uninterrupted cuts over work such as motor shafts, spindles, valve stems, back shafts, piston rods, axles—in fact, any shaft regardless of length, number of steps, tapers and radii. There are Turchan Follower attachments for converting lathes, milling machines, planers, shapers, and grinders. Whatever the job—you can "Turn to Turchan to cut costs!"

* *Name on request*

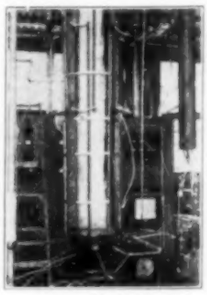
Write for Information, Catalog, and Estimate

Turchan FOLLOWER MACHINE COMPANY
8259 LIVERNOIS AVENUE — DETROIT 4, MICH.
Oldest Manufacturer of Hydraulic Duplicating Attachments for Machining Tools

BREVITY—Identify by IEN - 9613 if you write the maker

HEATING . . Tubular electric unit applied to heat process equipment

Source: EDWIN L. WIEGAND CO.
7505 Thomas Blvd., Pittsburgh 8, Pa.



New **application** of the company's Type-T tubular electric element is on the outside of a pilot catalytic cracker, as shown in the illustration. The alloy-sheathed elements are triangular in cross-section to provide a flat contact surface. Stainless-steel bands hold the elements in place. Each is supplied in a required length, straight or curved, to fit contours at the top and bottom of the vessel. Following application, the assembly is covered with suitable insulation and the heater terminals are connected into a control panel for centralized regulation.

BREVITY—Identify by IEN - 9614 if you write the maker

LIGHTING . . Inspection unit to illuminate confined locations

Source: DANIEL WOODHEAD CO.
13-17 N. Jefferson St., Dept. 100, Chicago 6, Ill.

Head diameter is 1 in. over the combination reflector guard in both the 8-in. and 9¼-in. assemblies in which this new Protex service light is available. Head lengths measure 3 and 4¼ inches. Handle diameter is ⅝ inch. The lamp in each unit is miniature screw-base design for operation on 110-volt input. Ratings are 7 and 15 watts.

BREVITY—Identify by IEN - 9615 if you write the maker

SANDING . . Portable electric tool also grinds, brushes, and planes wood

Source: HOLT MFG. CO.
649-53 20th St., Oakland 12, Calif.

No. 223 designates a new portable electric tool in the company's Whirlwind line in which a ¾-hp. universal motor operates on 110-volt ac. or dc. at free speed of 4,200 rpm. The tool weighs 14 lb. and measures 18 in. over its housing and handle. It is equipped with a 7-ft. extension cord and plug and a 7-in. sanding disc. In this assembly the list price is $82.50.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9616 if you write the maker

MEMO

FROM: **Arthur Bauer**
Deep Down in Dixie

TO: **Purchasing Agents**
Everywhere

SUBJECT: **GIFTS FOR CHRISTMAS**

For GOODNESS Sake, please wire or write at once for our new 1951 illustrated folder, describing ARTHUR BAUER'S PLANTATION PRESERVES and RELISHES, a gift that's sure to please.

Choice of 10 Christmas Gift Box assortments, ranging from $2.95 to $18.95, with selections of our famed good-eating specials.

Prepared with tender care from taste-tested old Southern plantation recipes: Artichoke Relish—Spiced Watermelon Rind—Orange Marmalade—Whole Peach Pickle—Peach-Pineapple Preserves—Spiced Cinnamon Pears—Clear Guava Jelly and others. Also, our old fashioned Chewy Pecan Pralines and delicious Orange-Pecan Stuffed Dates.

CHARGE ACCOUNTS SOLICITED FROM RATED FIRMS

Special Discounts Offered on Orders of 50 or More Identical Packages

Arthur Bauer's PLANTATION
Walterboro 5, S. C.

3 Full Pints, Trial Package, Only $2.95 Postpaid

GUARANTEED TO PLEASE OR MONEY REFUNDED

BREVITY—Identify by IEN - 9617 if you write the maker

Engrave

. . . PANELS UP TO 25" WIDE IN YOUR OWN SHOP WITH THE *NEW* ENGRAVOGRAPH

Portable Model 1-S

The *only* portable machine which reproduces 15 sizes from one master alphabet.

The *only* one with *adjustable* copy holding slides for multiline engraving in one set-up.

Self-centering holding vise for nameplates.

Send for Booklets
1-S 23—portable model
H-23—heavy duty model

NEW HERMES, Inc. — new hermes Engravograph
13-19 University Pl, N. Y. 3, N. Y.
CANADA: 359 St. James St., Montreal
World's Largest Manufacturer of Portable Engraving Machines

BREVITY—Identify by IEN - 9618 if you write the maker

Now! AN AIR PRESS BUILT FOR PRODUCTION USE

Here's another Famco Cost-Cutting Machine—a compact, rugged Air Press built for high-speed production operation. Famco Air Presses are available in 20 models, ½ to 3½ Ton capacity with electric or air controls—the product of Famco and Bendix-Westinghouse engineering. Features include:

- Semi-steel cast frame and cylinder mount; use of alloy-steel, copper tubing and steel fittings throughout.
- Frictionless (leak-proof), longer-lived cylinder requires no lubrication.
- Infinitely variable vertical adjustment of cylinder.
- Extra-long strokes infinitely variable from 0 to maximum.
- Accurate, built-in pressure gauge.
- Ram keyed to prevent rotating.

For further details, write for new Famco Air Press Catalog.

FAMCO MACHINE CO., 1303 18th St., Racine, Wis.

famco COST CUTTING **machines**

ARBOR PRESSES • DRILL PRESSES • BAND SAWS • AIR PRESSES
POWER PRESSES • FOOT PRESSES • SQUARING SHEARS

BREVITY—Identify by IEN - 9619 if you write the maker

HALLOWELL UNI-TRUK

HEAVY-DUTY TRUCKS FOR *TOUGH* JOBS

Tough jobs are easy with these sturdy, 2-wheel HALLOWELL Trucks. All-welded, all-steel construction minimizes weight (heavier model #738 weighs only 50 lbs.), cuts maintenance costs, lengthens truck life. Ribbed, angle-form steel nose carries heavier pay loads without bending, reinforces "UNI-TRUK" at point of severest stress. Two popular models: #738 with 8" wheels and braced legs; #734 with 6" wheels, no legs.

Write for Bulletin 718-2.

HALLOWELL

MATERIALS HANDLING EQUIPMENT

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 9620 if you write the maker

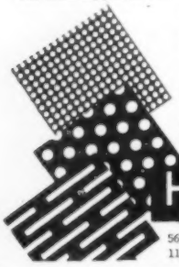
Unlimited Choice of Patterns • Accurate Holes Smooth Surfaces • Design Facilities for New Applications

HERE AT H & K, you'll find an intelligent consideration of your industrial problems. Maximum cooperation is afforded designers and product engineers in the creation of specifications for Perforated Metals and other materials . . . providing the desired end results at lowest possible cost.

H & K Perforated means an extremely wide choice of sheet metals (coil and plate form, tool perforated to an accuracy of ±.0005" where necessary. Non-Metals include various Plastics, Cellophane, Foil, Masonite, Fabrikoids and a host of others.

Ask us for full information and recommendations on how to meet current requirements.

Also Remember—H & K Standardized Guard Parts for the safe enclosure of gears, belts, motors and other dangerous moving parts.



The Harrington & King Perforating Co.

5637 FILLMORE ST., CHICAGO 44, ILLINOIS
114 LIBERTY STREET NEW YORK 6, N. Y.

BREVITY—Identify by IEN - 9621 if you write the maker

Kester Solder

Kester makes over 100,000 different types and sizes of flux-core solders. Kester Solders are made from the finest grades of tin and lead available.

Preferred

Kester Solders are not only preferred by industry, but individual workers also insist upon Kester to enable them to do their best work.

Saves Time

Contact Kester's Technical Department on your soldering problems. There is no obligation.

KESTER SOLDER COMPANY
4201 Wrightwood Avenue
Chicago 39, Ill.
Newark, N. J. Brantford, Can.

KESTER SOLDER

SEND FOR FREE MANUAL: "SOLDER AND SOLDERING TECHNIQUE"

BREVITY—Identify by IEN - 9622 if you write the maker

The discharge of fluid from closed vessels sometimes becomes so rapid that the pressure differential between outside and inside causes collapse. The Honeywell Vacuum Breaker prevents such costly damage by keeping the vacuum within safe limits . . . cheap insurance considering cost of a half inch size is less than $5.00.

Sizes ½" to 5" . . . screwed connections . . . spring loaded construction. Made of bronze throughout. Vacuum adjustable from 2 to 24 inches of mercury. Relief Capacity from 5.7 cu. ft. of air per minute for ½ inch size, to 720 cu. ft. per minute for 5 inch size. Prompt shipment from stock. Send in your orders today.

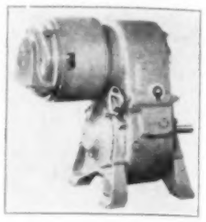
MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 1911 Windrim Ave., Philadelphia 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

Honeywell VALVE PRODUCTS

BREVITY—Identify by IEN - 9623 if you write the maker

DRIVE . . Variable speed unit assembles motor and V-belt transmission

Source: STERLING ELECTRIC MOTORS INC.
5399-03 Telegraph Road, Los Angeles 22, Calif.



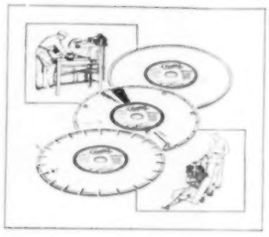
New sizes rating 20 to 25 hp. have been added to the company's Speed-Trol variable-speed drive in which a motor is combined with a variable-pitch V-belt transmission. The new units are intended particularly for use in the chemical, metal working, food and plastic industries. Drip proof design prevents liquids or foreign materials from falling into the motor. Speed adjustment is by turning a handwheel on the side of the housing. Type KFE is the designation.

The drive is available for any standard voltage on two or three-phase 50 or 60-cycle operation with three speed ranges to 1,000, 666 and 500 from 2,000 rpm. Each unit can be supplied for manual, electric or mechanical remote control. Base dimensions are 22 in. in width by 21½ in. front to back. Overall length, in line with the shaft, is about 42 inches.

BREVITY—Identify by IEN - 9624 if you write the maker

CUTTING . . Abrasive discs for concrete, brick, tile, stone

Source: CLIPPER MFG. CO.
2802 Warwick, Kansas City 8, Mo.



Three new units have been added to the company's line of circular abrasive discs employing diamond-impregnated rims particularly to cut concrete and asphalt on building floors, in drives, walks and runways. Concrete containing limestone aggregate can be cut to a depth of 1 in. at the rate of 10 ft. per minute. Asphalt containing the same aggregate can be cut at the rate of 12 fpm. to the same 1-in. depth.

The complete line contains 36 specifications of discs for all types of aggregate and age of concrete. Diameters are 8 to 18 in. and thickness from 5/32 to 7/64 inch. The units apply in any type of concrete saw.

BREVITY—Identify by IEN - 9625 if you write the maker

LUBRICATING . . Technical article reprint describes colloidal graphite for die casting machines

Acheson Colloids Corp.
2000 Washington Ave., Port Huron, Mich.

W. E. Lang, company's Service Engineer, is author of a recent article which the company has reprinted and now offers upon request. Title is "Colloidal Graphite Lubricates Die-Casting Machines". Topics include application methods in the dies, oil or water dispersions, other uses.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9626 if you write the maker

AUTOMATIC HOPPERS and ASSEMBLY MACHINES

for

1. Machining
2. Assembling
3. Packaging
4. Sorting

We have helped many companies to lower their production costs.

Our experience in design of automatic equipment is available to you.

SEND US YOUR PROBLEMS

KRAUS DESIGN INC.
Designers and Builders of Automatic Machinery
948 Exchange Street Rochester 8, N. Y.

BREVITY—Identify by IEN - 9627 if you write the maker

A PAID NEWS ADVERTISEMENT BY WINNEN INCINERATOR CO.

INDUSTRIAL INCINERATOR

400 pounds per hour of 50 percent wet materials

Consumes wet and troublesome refuse. Disposes of wet materials with great efficiency and without smoke or any disagreeable odors.

May be operated inside or outside the plant in accordance with your needs and space requirements. All models are portable. Composed of heavy castings lined with high-temperature resisting refractories.

Gas fired using standard under-fire burners with auxiliary firing devices adaptable for special problems. Oil fired burners are available. Capacity 20 bushels per hour. Oversize hopper doors, 24 by 18 inches.

Where labor and time are vital, automatic solenoid control is available to turn on and shut off gas at selected time intervals.

WINNEN INCINERATOR CO.
930-34 Broadway Bedford, Ohio

BREVITY—Identify by IEN - 9628 if you write the maker

Don't Walk... TALK!

The NEW Executone Intercom saves steps, increases output, cuts costs!

Compute the cost of time wasted by executives and employees running back and forth. *That's how much* the NEW Executone Intercom can save you! Your voice—with lightning speed—gets information, gives instructions. Every working hour becomes more productive for you and your employees. "Inside calls" no longer tie up telephone lines. Office and plant operate at a new peak of efficiency!

Years ahead of its time in operation and design!

Executone's exclusive "CHIME-MATIC"® Signalling announces calls by chime and signal light. Calls may be answered from across the room—yet privacy is assured. New switching circuits for every need make new savings possible. Voices are clearer, distinct, instantly recognizable. Inexpensive 2 station system easily expanded. It will pay you to get the whole story. Just mail the coupon.

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COMMUNICATION & SOUND SYSTEMS

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Without obligation, please let me have:
☐ The name of your local Distributor.
☐ Complete descriptive literature.

Name..... Title.....
Firm.....
Address..... City.....

BREVITY—Identify by IEN - 9630 if you write the maker

CUT ANY SIZE OR SHAPE

Curve, straight, irregular—every shape cut accurately. Precision circles any size from ¼" to 6". This accurate, practical tool is needed in every tool kit for gaskets, discs, shims, patterns, designs, odd shapes and straight strips from cloth, board, fibre, foil, leather, rubber, paper or any pliable sheet material. Sturdy construction. Easy to use. Thousands in use by individuals and largest concerns. Complete with cutting board, blades, pivot pins—only $7.80 postpaid (Check or money order) on money-back guarantee of satisfaction. Send for your Spearhead Cutter TODAY. Also available up to 60" capacity.

ZIMMERMAN PACKING CO.

DEPT. 30 · SPEARHEAD DIV. · CINCINNATI 12, OHIO

BREVITY—Identify by IEN - 9631 if you write the maker

FEDERAL

SIRENS

HORNS

For guaranteed satisfaction, specify Federal for all industrial applications . . . warning, alarm, paging, come-on, etc. . . . and Federal has Civilian Defense and other emergency protection signals for your consideration. Federal, oldest and largest signal manufacturer meets your every signal need with the largest selection of long-lived, precision signals for heavy duty use.

BELLS

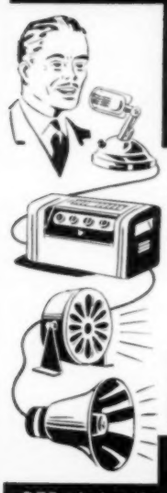
Write for Industrial Signal Catalogue

FEDERAL ENTERPRISES, INC.
formerly FEDERAL ELECTRIC COMPANY, INC.
8745 South State Street Chicago 19, Illinois

BREVITY—Identify by IEN - 9632 if you write the maker

Completely Packaged

TELEPHONE INTERCOMMUNICATION PLANT BROADCAST *Systems*



Engineered to individual requirements using only standard equipment such as:

RAULAND • AMPLICALL • MASCO
JENSEN • ATLAS • SHURE

Unconditionally guaranteed

Shipped anywhere, ready to install

Write for estimate, outlining your requirements.

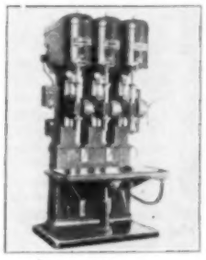
2-Station Intercommunication System, complete with 80 Ft. wire $29.95 Postpaid

FIDELATONE CO.
851 Atlantic Ave., Bklyn 17, N. Y.
NEvins 8-5210

BREVITY—Identify by IEN - 9633 if you write the maker

DRILLING . . Upright machine, single or ganged, to ¾ in. in steel

Source: EDLUND MACHINERY CO.
35-39 Huntington St., Cortland 11, N. Y.



Stepless variation in the drive speed features construction of the company's new Model-2F drilling and tapping machine. Adjustment is by turning a crank at the front of the machine in connection with an indicating dial to alter relative diameters of the two variable-pitch sheaves over which a wide-type V-belt is applied.

Speed range is 400 to 1800 rpm. based on a 1,200-rpm. motor. An additional range between 100 and 450 rpm. is obtained by specified addition of back gears in the head construction. All operating parts are mounted on ball bearings. The machine is available in 1 to 8-spindle assemblies in pedestal and round-column design with 8 and 15-in. throat.

Equipment subject to specification includes a power feed that applies at the side of the spindle. It engages when the drill touches the work and disengages at any time by raising the feed lever or by operation of a depth stop. The spindle then returns to the top of its stroke where movement is stopped by a spring plunger.

Four feeds are between 0.0015 and 0.009 in. per revolution. These are engaged by turning a knob connecting into the closed gear housing in the machine head. Also available is the company's reversing motor tapper or lead-screw tapper.

BREVITY—Identify by IEN - 9634 if you write the maker

SANDING . . Motor driven machine for floors, 8 by 7½ in. drum

Source: PORTER-CABLE MACHINE CO.
1712-16 N. Saline St., Syracuse 8, N. Y.

Model 504 Contractor Special is a new floor-sanding machine with a 2-hp. motor for drum operation at 1,600 or 2,000 rpm. The assembly includes an exhaust blower that picks up dust and delivers it into a collector bag. A clean-out hole at the bottom of the machine traps pieces of the sand paper, nails and other foreign objects before they reach the blower.

The operator can select any one of five adjustments of drum pressure on the floor surface. He also controls operation of the motor and movement of the machine at the steering handle. Weight is 241 pounds. Turning radius is 3 feet. Overall dimensions are 36 by 13¾ by 36 inches. Height to the top of the motor is 20 inches. A rubber bumper protects vertical surfaces surrounding the area being sanded. Standard equipment includes a 100-ft. power cord, a carrying handle assembly, a paper-cutting template, abrasive paper in 6 grits, dust bag, a supply of grease and the necessary wrenches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9635 if you write the maker

...cut equipment down-time—DOWN with pin-point dust-removal via durable *SPIRATUBE*

Abrasive dust constantly wages war against the profitable, uninterrupted operation of grinders, buffers, polishers, and near-by machine-tools. It bites into bearing surfaces—and PROFITS. But it can be licked.

Efficient, light-weight, Spiratube chases, and captures dust . . . around corners, into pockets, hard-to-get-at places. Cushioned construction rides with the punch of high-velocity abrasive particles . . . lasts and lasts.

This BETTER tubing is portable, easy to install. Initial cost is small, maintenance cost practically nil . . . adds up to an all-time low in cost-per-year of efficient dust-removal, and it fits into present systems. Standard sizes immediately available from well-stocked distributors—Coast-to-Coast.

Send for your copy today

Also Makers of
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FLEXFLYTE
THERMATUBE
Literature Available
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FLEXIBLE TUBING CORPORATION
SPIRATUBE
GUILFORD, CONNECTICUT, U.S.A.
Western Office: 416 CITIZENS BANK BLDG. PASADENA 1, CALIFORNIA

S-L-3A

BREVITY—Identify by IEN - 9636 if you write the maker

new **OTC POWER-TWIN**

PORTABLE PEDESTAL PRESS

An amazingly efficient portable pedestal press, which combines with the Power-Twin Hydraulic Ram to perform tough jobs easily and quickly.

STRONG. Handles 95% of all pulling or installing jobs. Especially designed for use with OTC 17½ ton Hydraulic Puller.
AMAZINGLY PRACTICAL for all production, assembly line and maintenance operations.
PORTABLE OR PERMANENT. Easily moved from job to job or located near permanent equipment.
COMPACT. Base is only 20 x 21 inches.
VERSATILE. Provides almost unlimited vertical adjustment for pulling or installing wheels, pulleys, bushings, collars, couplings, gears, shafts and bearings.

POWER-TWIN HYDRAULIC BENCH PRESS

Bench frame available for use with OTC Power-Twin Center-Hole Hydraulic Ram. Provides compact, inexpensive hydraulic press for mounting on bench for use in shop—or service truck for use on the job.

See your jobber for complete information or write us.

OWATONNA TOOL COMPANY
371 CEDAR STREET • OWATONNA, MINNESOTA

BREVITY—Identify by IEN - 9637 if you write the maker

COMPARE

it all adds up to this..

MODINE

is tops in unit heater values

Yes, on every count, leading architects and engineers agree — Modine Unit Heaters have everything!

Performance? Choose any Modine—Horizontal, Vertical or Power-Throw—and you get uniform comfort.

Economy? Fuel bills are smaller with Modine. And installation and maintenance costs are far lower, too.

Get all the facts from your Modine representative listed in your phone book classified section. Modine Mfg. Co., 1503 DeKoven Ave., Racine, Wis.

Ask for Bulletin 149A. Modine Unit Heating. Also available — bulletins covering special applications in commercial brooder houses, greenhouses, and milk houses.

U-1113

***Modine* UNIT HEATERS**

FOR FACTORIES • STORES • GREENHOUSES • COMMERCIAL BROODER HOUSES • MANY OTHER APPLICATIONS

BREVITY—Identify by IEN - 9638 if you write the maker

—of "Standard's" UNBRAKO *Standards.*

Write on your business letterhead, today.

SOCKET UNBRAKO SCREWS

"STANDARD" RECOMMENDS STANDARDS

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 9639 if you write the maker

WIRE MESH

Maybe it all *does* look pretty much the same at first glance. But when a firm has been making wire mesh for 70 years man and boy, there's bound to be a little more to it than meets the eye — a little more know-how in engineering and weaving, a little more quality in the product, a little more service and satisfaction for the user.

JELLIFF WIRE MESH is woven in all ductile metals

JELLIFF WIRE MESH is woven in all commercial weaves

JELLIFF WIRE MESH is woven in widths up to 72 inches

JELLIFF WIRE MESH is economical. Every foot runs true to the specifications.

★ ★ ★ ★

JELLIFF WIRE MESH is a quality product and has been for 70 years. You can depend on it.

Write today for full details about JELLIFF WIRE MESH, JELLIFF WIRE MESH PRODUCTS, and JELLIFF'S CONSULTATION SERVICE on wire-mesh engineering. Address Department 12.

THE C. O. JELLIFF MFG. CORP.
DIPPING BASKETS · LEKTROMESH · RESISTANCE WIRE · WIRE MESH PARTS · WIRE CLOTH · STRAINERS • FILTERS
SOUTHPORT CONNECTICUT

BREVITY—Identify by IEN - 9640 if you write the maker

INDIVIDUAL CUTTING OIL SANITATION

FOR YOUR PLANT!

Here's how to prevent costly spoilage and eliminate foul odors: ask your DOLGE Service Man to take samples of your coolant for *free* bacteriological and chemical analysis. A complete laboratory report will show the correct coolant handling method for *your particular operation.*

Only if tests warrant it will a DOLGE STERIDOL GERMICIDE be recommended—a "tailor-made" preparation to meet *your exact needs.* Used as directed it will not irritate the skin or corrode metals. The cost? Far less than a cent per gallon of coolant!

Write for Booklet "Cutting Oil Sanitation"

STERIDOL

dependable DOLGE

WESTPORT, CONNECTICUT

BREVITY—Identify by IEN - 9641 if you write the maker

Send for your copy of this CATALOG TODAY!

60 pages of valuable information describing the line of Honeywell Automatic Controls

THE KIND of information you want, right at your finger tips . . . on pneumatic, electric and electronic non-indicating controls for temperature, pressure and humidity.

Catalog No. 8304 is complete and factual . . . send for your copy today.

Also ask to be put on the mailing list for *Industrial Control News* — a periodical publication devoted to new and unusual applications of automatic controls throughout industry. It is written by and for production and maintenance men.

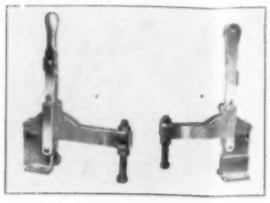
MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division,* 1156 Wayne Ave., Philadelphia 44, Pa.

MINNEAPOLIS Honeywell Brown Instruments

BREVITY—Identify by IEN - 9642 if you write the maker

CLAMP . . Toggle design for application on jigs and fixtures

Source: LAPEER MFG. CO.
3054-58 Davison Road, Lapeer, Mich.



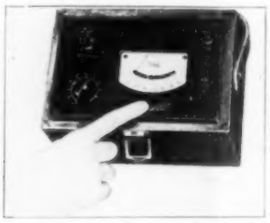
Model CAV to the left and Model CAS to the right are two new designs in the company's line of hand-operated toggle clamps to hold work in position for machining and assembling. Model CAV is built in two ratings of 1,200 and 2,000 lb. at the end of the toggle bar or 2,550 and 4,150 lb. with the spindle located a little over 3 in. in front of the base.

Model CAS, also in two sizes with the same ratings, differs a little in the base design to permit the toggle bar to swivel around the base in a vertical arc through 180 deg. for application in various positions. Varying thicknesses can be held with either model without altering the initial setting. Work that has been sprung can be aligned prior to welding.

BREVITY—Identify by IEN - 9643 if you write the maker

TESTING . . Moisture meter reads percent in grain samples

Source: WESTON ELECTRICAL INSTRUMENT CORP.
641 Frelinghuysen Ave., Newark 5, N. J.



New damping mechanism to prevent excessive galvonometer fluctuation has been added to the company's Tag-Hep penstall moisture meter. The new device is operated by pressing a button. This reduces pointer oscillation for quick reading.

Application is in connection with a pair of motor-driven roll electrodes that are mounted in a hopper into which a sample of grain is fed. It is powered by batteries or by an electronic battery eliminator which connects to an ac. line and supplies constant dc. of regulated potential.

BREVITY—Identify by IEN - 9644 if you write the maker

CLEANING . . Ultrasonic equipment applied to clean small openings in metal parts

General Electric Co.
Dept. 6X-201, Schenectady 5, N. Y.

New use is being developed for the company's ultrasonic generator previously described IEN-9880-49 to remove grease, oil, metal shavings and lapping compound from minute crevices in electric shaver heads. The equipment is not in production in completed form, since the generator is the only standard item. Output from the generator connects to a quartz crystal to vibrate the cleaning solvent in which the shaver heads are immersed. Tests show the method to be quick and efficient.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9645 if you write the maker

how to keep hot circuits cool....

Trion

DUAL ELEMENT TRIPLE PROTECTION FUSE WITH THERM-A-TRIP

— FUSE WITH A FUTURE

TRION is the coolest operating fuse of any type.
TRION gives instantaneous cut-off on short circuit.
TRION controls rate of rise of recovery voltage.
TRION has longest safe time-lag of any overload protective device.
TRION'S time-delay averages five times longer than any renewable or one-time fuse.
TRION starts heavily loaded motors safely.
TRION protects against single phasing.
TRION'S watt (power) loss is substantially lower.
TRION'S tripping temperature provides a heat ceiling 500°F. lower than any zinc link fuse.
TRION reduces and controls the heating of switches and fuse clips.
TRION permits the use of switches of lower rating.
TRION keeps hot circuits cool.

A TRION FOR EVERY CIRCUIT

Trions are available in 141 Standard Sizes ranging from 1 to 600 amps for both 250 and 600 Volt circuits. Other sizes for these same voltages range from 1/10 amp to 9 amps. Midget Sizes (13/16" dia. by 1 15/16" long) vary from 1/10 amp to 10 amps. ASK FOR TRION OR WRITE FOR FREE TRION BULLETIN #506-A TODAY.

"Look to Shawmut for leadership"

THE CHASE-SHAWMUT CO.
386 MERRIMAC STREET · NEWBURYPORT, MASSACHUSETTS

BREVITY—Identify by IEN - 9646 if you write the maker

CANNON PLUGS

GREATEST VARIETY OF ELECTRIC CONNECTORS FOR MOST ELECTRICAL AND ELECTRONIC USES

CANNON ELECTRIC QUICK-DISCONNECT PLUGS AND RECEPTACLES save time and money in assembly, servicing and inspection of electrical and electronic equipment. Used extensively in aircraft, radio, geophysical instruments, television, public-address systems, industrial controls, communications, motors, x-ray equipment, recorders, cameras, etc., etc.

ALSO a full and complete line of SIGNAL EQUIPMENT for hospitals and industrial concerns; Conduit Fittings, specialty lights, etc., Direct-Current Solenoids.

Factories in Los Angeles, Toronto, New Haven. Representatives in principal cities. Address inquiries to Cannon Electric Company, Department I-112, P. O. Box 75, Lincoln Heights Station, Los Angeles 31, California.

CANNON ELECTRIC

BREVITY—Identify by IEN - 9647 if you write the maker

Complicated designs produced in

ONE AUTOMATIC OPERATION

Avoid waiting for scarce prefabricated materials; eliminate scrap loss. GRC delivers small parts faster, more economically. Simple or intricate parts produced in one automatic operation—completely trimmed, ready for use. 100,000 pieces to many millions.

Max. Wt. 1/2 oz.
Max. Lgth. 1 3/4 in.
SMALLNESS UNLIMITED

Write, wire, phone for bulletin and samples; or send prints for quotations and delivery dates.

GRIES REPRODUCER CORP.

797 East 132nd St., New York 54 • MO 9-2476

BREVITY—Identify by IEN - 9648 if you write the maker

RHOADS

Tannate® LEATHER PACKINGS

U-VEE-CUP FLANGE

Made to your specifications by leather craftsmen with a tradition for producing fine leather products for nearly 250 years. Write for details.

PRODUCERS OF FINE LEATHER FOR 249 YEARS

J. E. RHOADS & SONS
33 NORTH SIXTH ST., PHILA. 6, PA.

BREVITY—Identify by IEN - 9649 if you write the maker

for air conditioning, packaging, refrigeration, air, printing equipment, etc.

The "M" Series valves are approx. 4⅞" high, yet have extremely fast action and large capacity for liquids, air and inert gases! They have soft insert seats to prevent leakage — will operate in any position— nylon fabric coated diaphragm for long life—max. power consumption 10 watts—continuous duty! **M-2** two-way normally closed —5 to 150 p.s.i.—port size ⅜" or ½"; orifice ⅜"—pilot operated. **M-3** three-way normally closed, three-way normally open or directional flow—20 to 150 p.s.i.—port size ⅜" or ½"; orifice ⅜"—pilot operated. Special models available.

Write for Bulletin No. 493

Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
134 Belden Ave., Norwalk, Conn.

BREVITY—Identify by IEN - 9650 if you write the maker

STOW *goes into the mines with the men*

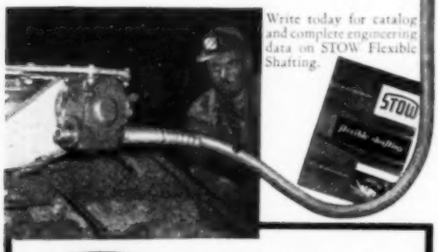
flexible shaft application developed by the Cochran Co., Johnstown, Pa.

TO ELIMINATE DANGER . . . of explosion or electric shock while drilling in wet or gassy mine conditions.

TO SPEED PRODUCTION In use figures prove that this flexible shaft application has increased production by more than 25%.

TO CUT COSTS The light weight and high speed of this unit make economical one-man operation possible.

STOW CAN HELP SOLVE YOUR POWER TRANSMISSION PROBLEMS, TOO!



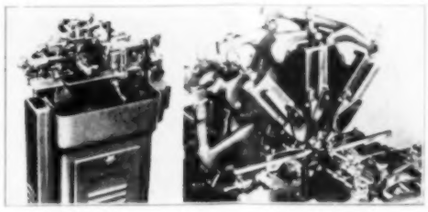
Write today for catalog and complete engineering data on STOW Flexible Shafting.

STOW MANUFACTURING CO.
25 Shear St.
Binghamton, N. Y.

BREVITY—Identify by IEN - 9652 if you write the maker

LATHE . . Automatic screw machine, ½ in. spindle bore, to 10,000 rpm.

Source: CARL HIRSCHMANN CO.
28-32 Park Ave., Manhasset, N. Y.



Model R10 is a new design of the Tornos Swiss automatic screw machine. It has normal stock capacity to $\frac{7}{16}$ in. in diameter, turning length of 2¾ in. with a flat cam or 4 in. with a bell cam. There are 20 spindle speeds in a range between 1,050 and 10,000 rpm. Drive is by a 2-hp. motor. Floor space measures 61 by 32 inches. Weight is about 1700 pounds.

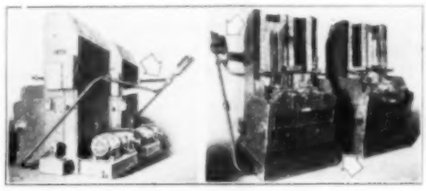
Five tool bits apply to turn the work by combined radial tool infeed and axial feed of the rotating work. Five radial tool holders, two mounted on a cam-controlled rocker, are supplied as standard equipment. Six tool holders on 6-in. independent slides can be specified. All of the tools are set by micrometer screws.

Axial movement of the headstock is obtained by adjustable cam-operated mechanism. Chucking can be operated in any position of the headstock. The belt-driven spindle rides in an adjustable needle bearing at the front and ball and thrust bearings at the rear. List price with five tools, electrical equipment and a motor is $5,830.

BREVITY—Identify by IEN - 9653 if you write the maker

BROACHING . . Vertical machine for engine connecting rods and caps

Source: OILGEAR CO.
1567-A W. Pierce St., Milwaukee 4, Wis.



New combination of two of the company's Type-XD broaching machines and a Hapman tube-enclosed continuous conveyor make up a production unit to machine the half-round and joint faces with tongues for engine connecting rods and caps. Production is at the rate of 380 of each of the parts per hour. Chips resulting from the broaching operation drop into the machine bases where they enter the closed-circuit conveyor for delivery at a single point at the rear.

Hydraulic pressure to operate the machine is supplied by Type DX-6011 two-way variable delivery pump driven by 40-hp. motors. Work is mounted on tables that employ a shuttling mechanism in the knee bracket. This mechanism locks and preloads the tables in broaching position to back up the work. A ½-hp. motor drives the conveyor.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 9654 if you write the maker

NO TRAFFIC TIE-UP!
. . . WHEN YOU REPAIR OR RESURFACE WITH . . .
QUICK-FLOOR

You can make a complete, permanent, heavy duty concrete floor patch (or covering) in *one minute* and is ready to use when placed. Placing causes no delay or interference to traffic. The rule is *place, pack,* and *use* without cutting or mixing.

The continuous use of *Quick Floor* since '38 by many people *(some over three hundred drums), spells satisfaction.*

We guarantee satisfaction. Service as required. Write for new folder.

dura-Tred Co. *Manufacturers since 1938*
352 N. Central Park Blvd., Chicago 24, Ill.

BREVITY—Identify by IEN - 9655 if you write the maker

FOILED AGAIN!

Those three little villains — Dust, Dirt, and Grit — are *foiled every time* they match their wits against a CLEMENTS-CADILLAC blower-suction cleaner. It blasts them out of every nook and cranny of your machinery and equipment — quickly, easily, and economically.

Eligible under NPA Regulations #2 and #4.

SAVE TIME · MONEY
PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 5 models with attachments for every cleaning job.

CLEMENTS CADILLAC
PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS MFG. CO.
6620 S. NARRAGANSETT AVE., CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

BREVITY—Identify by IEN - 9656 if you write the maker

Wayne Industrial Air Compressors

smooth
quiet
cool

MODEL
W - 6208 - H
SHP - 2-Stage

send for CATALOG

INCREASE PRODUCTION with air! If your present source of air is overloaded install small units in each department needing air. Supplies air at higher pressures or saves running large machine when the department works overtime. Completely packaged units of power . . . Wayne Compressors are available from ⅓ H.P. to 10 H.P. Ask for catalog.

INDUSTRIAL LIFTS · HOSE REELS

THE WAYNE PUMP COMPANY
FORT WAYNE 4, INDIANA · TORONTO, CANADA

BREVITY—Identify by IEN - 9657 if you write the maker

FLEXLOC
SELF-LOCKING NUTS

STAY TIGHT

AFTER 171,360,000 VIBRATIONS AT 4000 CYCLES PER MINUTE

Plain nuts with lock washers loosened after only ONE HOUR of 4000-cycle-per-minute operation on the vibrator of a concrete block machine at the plant of the Bethayres Concrete Block Co., Bethayres, Pa.

When FLEXLOC Self-Locking Nuts were installed, they were *still tight* when the machine was torn down for rebuilding after 6 weeks operation—at 4000 C.P.M., 17 hours a day, 7 days a week!

If you have an application where nuts loosen or back off, try FLEXLOC, the one-piece, all-metal STOP-and LOCK-NUT "that won't work loose."

Send for Bulletin 619-A today.

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 9658 if you write the maker

Automatic Batch Counter

Counts tens, dozens, hundreds or any predetermined quantity and automatically controls marking, separating or packaging equipment.

MONITOR *Automatic* BATCH COUNTERS

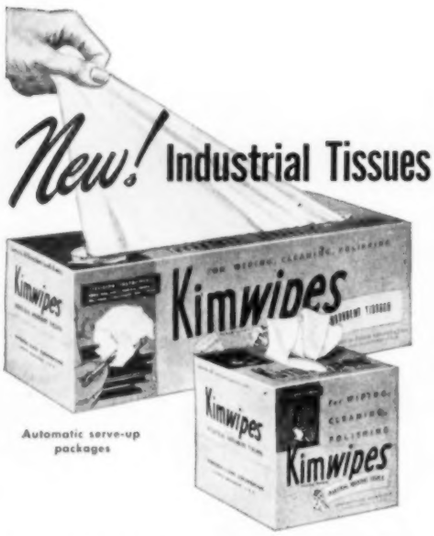
Monitor Electric Batch Counter, *counts any BATCH Quantity* of parts, packages, sheets, measurements or operations *and automatically controls* Batch Marking or separating devices, pile changers, kick out devices, conveyors, etc., *without slowing down production or missing a single count.*

Proved thru more than ten years use. Extremely adaptable. Tell us what you want to do or send for Bul. PDC-53.

8 pages of Batch Counting Case Histories, application information, etc. Send for Bul. PDC-53.

Production Instrument Company
700-10 W. JACKSON BLVD., CHICAGO 6, ILL.
Representatives in Principal Cities

BREVITY—Identify by IEN - 9659 if you write the maker



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Wiping precision instruments

Let clean, *disposable* KIMWIPES* industrial wiping tissues standardize—and economize—your cleaning operation. Soft, yet strong, they're ideal for cleaning precision tools and instruments. Recommended for use on finely finished surfaces. And highly absorbent KIMWIPES remove dust, dirt, grease and oil—quickly, safely.

The Bureau of Federal Supply stocks Kimwipes size 15" x 18" in all Supply Centers under stock item #53P23121-800.

Polishing machined parts

Kimwipes
INDUSTRIAL WIPING TISSUES

A product of Kimberly Clark

*T. M. REG. U. S. PAT. OFF. & CAN.

KIMBERLY-CLARK CORPORATION, IEN-951
Neenah, Wisconsin
Please send me Kimwipes literature.

Name .....
Firm Name .....
Address .....
City ..... Zone ..... State .....

BREVITY—Identify by IEN - 9661 if you write the maker

THREADING . . Sensitive machine for high speed small hole tapping

Source: ETTCO TOOL CO.
571 Johnson Ave., Brooklyn 6, N. Y.

Five sizes of the company's tapping attachment and standardized multiple-head units and work holders are available interchangeably for application in this new No. 72A tapping machine. Thus the machine with a No. 2 tapping head and maximum speed at 2,000 rpm. will drive a No. 1 to No. 6 tap through steel or a No. 1 to a No. 10 tap through zinc or aluminum. The machine alone without motor, starter or oil pump or the tapping head, lists at $325. It lists at $400 with the No. 200 head. Maximum capacity is ¼ to 7/16 in. in steel with maximum speed at 1,000 rpm. and drive calling for a ¾-hp. motor. This assembly lists at $440.

The spindle is mounted in sealed grease-lubricated ball bearings and is driven by belt connection over four-step V-belt sheaves between it and the motor. The quill mounts a faceplate at its bottom end to take the interchangeable heads. The plate is guided by vertical rods riding in bushings in the head and is attached to the upper end of a tension spring in the hollow machine column. The bottom end of this spring connects to a single-acting air cylinder and to a foot pedal equipped with a counterbalance that provides for return to "up" position when the taps are being retracted from the work. Depressing the pedal or, alternately, depressing a second pedal at the bottom of the machine to operate an air valve applies tension in the spring. This, in turn, pulls downward on the faceplate and moves the tap.

In the head is an oil reservoir with a sight-feed oil line to supply the taps with controlled lubricant. In the base is a 2½-gal. oil tank and a motor-driven oil pump.

Spindle travel measures 3½ inches. Table surface measures 16 by 10½ inches. Maximum distance from the baseplate to the table is 26 inches. Throat dimension is 7½ inches. Floor space measures 22 by 20 inches.

BREVITY—Identify by IEN - 9662 if you write the maker

MANAGEMENT . . Second quarterly report covering progress made in defense mobilization

Superintendent of Documents
U. S. Printing Office, Washington 25, D. C.

"Second Quarterly Report to the President on Meeting Defense Goals" titles a 48-page report by Charles E. Wilson, Director of the Office of Defense Mobilization, to summarize progress to date. The report opens with a review of the three months prior to July first. It covers position of the "free world with reference to resources with Western Europe on the free-world side and the adverse condition which would exist if Western Europe were lost. It includes the subject of military production in the current "tooling stage," touches upon expansion in our basic economy to support defense, explains controls of vital materials and operation of the Controlled Materials Plan. It brings up the point of manpower shortages as being local rather than general and highspots the subject of inflation with particular reference to stopping its further growth. Single copies are available on direct application to the United States Printing Office, Washington 25, D. C., accompanied by 30 cents.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9663 if you write the maker

PRODUCTION INSURANCE against GAS CURTAILMENT

ASSURED with VAPOFIER

Many costly plant shutdowns have been avoided by installing Vapofier as a dependable gas supply. Over 100 varied types of industries use it. Produces clean, sootless, odorless gas by vaporizing (not atomizing) fuel oil. Reliable automatic control, constant fuel-air ratio and uniform manifold pressure. Quick change from utility gas without flame interruption, using same piping and burners. 9 sizes with capacities from 70,000 to 4,000,000 B.T.U.'s per hour.

Write for complete details on the advantages of firing with Vapofier

VAPOFIER CORP. • 10326 S. Throop St., Chicago 43, Ill.

BREVITY—Identify by IEN - 9664 if you write the maker

Before you select a Temperature Regulator, compare low-cost Stacon with the rest. No other regulator has as many features or offers as many advantages as a Farris Stacon.

PROVE IT!

Make this Chekchart Test

	Farris Stacon	Air Operated	Self Operated
• Dirt Proof — Hermetically Sealed?	Yes		
• Extreme Accuracy?	±1°		
• Packing or Glands to Leak?	No		
• Drop-tight Shut off?	Yes		
• Vapor-steam Energized Super Power Pilot?	Yes		
• Supervision—Maintenance?	None		

Write for Stacon Bulletin 50-1000. It contains complete information on the most sensitive, accurate, economical temperature regulator available . . . anywhere.

Farris Stacon Corp.
432 COMMERCIAL AVE. PALISADES PARK, N. J.

BREVITY—Identify by IEN - 9665 if you write the maker

SAFER LONGER . . . SO THEY COST LESS

SURETY'S SURESEAL SYNTHETIC RUBBER Industrial Gloves have **10 times higher** abrasion resistance, **4 times higher** snag resistance, **much higher** resistance to virtually all industrial chemicals, than either rubber or standard synthetics.

See your distributor or write

THE SURETY RUBBER CO. Dept. I
CARROLLTON, OHIO

IN CANADA: Safety Supply Co., Toronto, Ont.

BREVITY—Identify by IEN - 9666 if you write the maker

PRECISION MEASURING

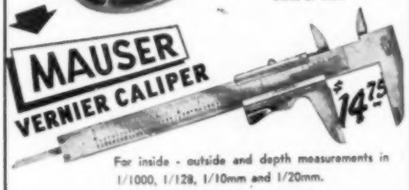
SCHERR MICROMETERS

Drop-forged steel frame easy to read. "No Glare" graduations. Guaranteed accuracy and unsurpassed workmanship.

For greater savings in dollars and better satisfaction, use "Scherr Tools".

Complete stock. All sizes — MM. or Inch.

MAUSER VERNIER CALIPER



For inside - outside and depth measurements in 1/1000, 1/128, 1/10mm and 1/20mm.

If not available from your dealer, order direct.

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GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
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BREVITY—Identify by IEN - 9667 if you write the maker

DO YOUR OWN TESTING

... tensile, compression, transverse or shear

DILLON
Universal Tester
saves
Time and Money

Average operator can make hundreds of tests (Standard Model) a day on spot welded specimens, riveted assemblies, plastic, wire, rubber, cloth, etc.

These portable testers easily handle flat, round or special shapes with extreme accuracy. Perfect for lab or shop. Manual or motorized. Will test materials with tensile strength as low as .25 pounds or as high as 125,000 pounds P. S. I.

Write today for free Tensile Strength Computer and illustrated folder with detailed information.

W. C. DILLON & CO., Inc.
1421-K SOUTH CIRCLE AVENUE FOREST PARK, ILLINOIS

BREVITY—Identify by IEN - 9668 if you write the maker

END FLOOR REPAIRS

for Years to Come!

LAY IT *and* FORGET IT!

EMERI-CRETE FLOORING

Made with CORTLAND EMERY AGGREGATE

The Heavy-Duty, "Armor Plated" Floor

For the longest lasting floor that money can buy—install EMERI-CRETE FLOORING. Whether laid throughout your plant, or in heavy service areas, EMERI-CRETE is the truly heavy duty flooring that does away with make-shift, money-wasting patching and re-patching. Its smooth, hard, dense surface provides a floor that is "armor plated" against wear from abusive traffic, crushing loads and impact breakdown. It is naturally non-skid—reduces likelihood of accidents—resists the effects of practically every processing material as well as extreme heat and cold.

EMERI-CRETE FLOORING is 100% natural crushed emery, cement and water. It is as easily laid as ordinary concrete, and lasts many times as long. For new floors or resurfacing old ones *it costs less than any other floor,* on a year-in, year-out basis!

FLOORING DISTRIBUTORS
Several choice territories are still open. Full protection. Ample sales and profit potential. Write for details.

GET MORE FOR YOUR FLOORING DOLLAR

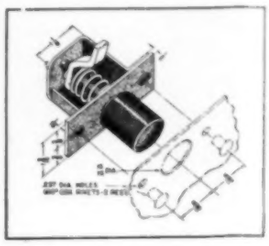
MAIL COUPON TODAY

WALTER MAGUIRE COMPANY, INC., Dept. IEN
60 E. 42nd Street, New York 17, N. Y.
☐ Please send detailed bulletin on EMERI-CRETE FLOORING
☐ Have representative make floor survey
Name ____
Company ____
Address ____
City ____ Zone ____ State ____

BREVITY—Identify by IEN - 9670 if you write the maker

FASTENING . . Rotating latch for use on doors, panels, cover plates

Source: SOUTH CHESTER CORP.
1401-5 Finance Bldg., Philadelphia 2, Pa.



Threaded stem with a knurled head measuring ⅞ in. in diameter to protrude through a door panel or cover plate, or with a slotted flush head for operation by a screwdriver, assembles in the pressed steel housing of this new latch. A cross-pin at the inner end of the stem holds it in the housing along with a formed steel grip finger or pawl and a backing spring. Turning the stem causes the finger also to turn into and out of latching position. Continued turning in closing direction after the finger is latched moves it along the threaded stem and applies holding pressure. This axial movement also is used in adjusting the finger for assemblies of varying thickness.

Smallest grip size obtained by mounting a finger of given shape is ⅛ in. minimum to ⅝ in. maximum. Largest grip size is 1⅛ in. minimum and 1½ in. maximum. Construction is in steel with cadmium or chromium-plated knob and screw. Assembly requires drilling of two rivet or screw holes and the center hole for the knob.

BREVITY—Identify by IEN - 9671 if you write the maker

NICKEL ALLOY . . Contains chromium and iron to conserve scarce nickel

Source: INTERNATIONAL NICKEL CO.
67 Wall St., Room 703, New York 5, N. Y.

Characteristics parallel Inconel

Incoloy trade names new nickel alloy containing about 35 percent nickel, 20 percent chromium and the balance iron except for small amounts of carbon, manganese, sulphur, silicon and copper. The alloy is being placed on the market while laboratory and field testing continues because of present emergency conditions and the excellent results of the tests so far completed. It is being produced in most standard rolling-mill forms, sheet, strip, rod, wire, tubes.

The structure is stably austenitic. Expansion coefficient is slightly higher than for Inconel even though the Incoloy contains approximately one-half the nickel content of Inconel. There is no tendency to become embrittled by precipitation of sigma or carbidic phases after prolonged exposure to intermediate temperatures.

The company is working at present to assemble specific data for long-time creep and rupture tests. Its metallurgists believe that, in various high temperature environments, the new alloy will have high resistance to attack by sulfidation, green-rot and molten cyanide salts and that it will be comparable to Inconel in resistance to oxidation and in fused neutral salts. Test data on resistance to corrosion at high temperatures will be made available soon.

Work hardening rate of Incoloy is practically the same as for Inconel so there should be no difficulty in fabricating the new alloy. It can be welded by standard methods including metal arc and inert gas.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9672 if you write the maker

INCLUDE *Wheeler* REFLECTORS IN YOUR DEFENSE PRODUCTION PLANS

Whatever you manufacture, you can depend on the greater lighting efficiency of Wheeler Fluorescent Fixtures to help speed production. There's a Wheeler Fixture for every job and every plant condition—engineered for installation ease and maintenance savings. Write

Wheeler Reflector Co.
275 Congress St. Boston 10, Mass.

Wheeler REFLECTORS

MADE BY SPECIALISTS IN EQUIPMENT SINCE 1881

BREVITY—Identify by IEN - 9673 if you write the maker

CUT COSTS

on production jobs like these, with

MULTIPRESS®

Through seven years and *six thousand* Multipresses, this improved kind of tool has brought eye-opening answers to needs for faster production, better work, less spoilage, lower die costs, safer operation, *and happier operators.*

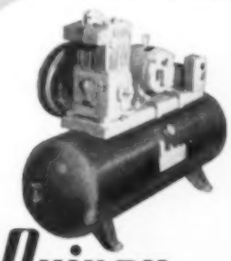
In addition to fast, smooth oil-hydaulic power, Multipress provides full, trigger-quick control of ram action *at all times.* Ram speed, pressure, and stroke length are quickly adjustable. Ram return can be set for either distance or pressure limits. Exclusive *Vibratory* ram action is available to answer problems of air-escapement from dies, metal strain, or uniform compaction. Standard Multipress accessories offer extra speed on many special types of work.

Multipress is built in eight frame sizes, with capacities from one to 50 tons. Denison will also design and build any tooling you need. Write for full details.

DENISON HydrOil ics

The DENISON Engineering Co.
1150 Dublin Rd., Columbus 16, Ohio

BREVITY—Identify by IEN - 9674 if you write the maker



LET *Quincy* COMPRESSORS

meet your air requirements

There is a complete range of Quincy Compressors available in sizes from 1 to 90 c.f.m. Quincy Compressors are designed for maximum efficiency and dependability. Quincy manufactures a complete line of both air and water cooled units in a variety of mountings. Write today for details and latest prices. Quincy Compressor Co., Dept. H 21, Quincy, Illinois.

QUINCY COMPRESSOR CO., Quincy, Illinois
Branch Offices: New York • Philadelphia • Chicago
St. Louis • Dallas • San Francisco

BREVITY—Identify by IEN - 9675 if you write the maker

Commemorating our 60th Anniversary

THE POWERS REGULATOR COMPANY

New Factory and General Office Building: 3400 Oakton Street, Skokie, Ill.

World's Most Modern Factory Producing Automatic Temperature and Humidity Control

. . . to meet the greatly increased demand for Powers products and to give you better controls, better deliveries and better values

. . . these advantages are possible with our large new plant and modern production facilities. With an enlarged engineering and production staff, plus 60 years experience in heating, ventilating, air conditioning and process control, we believe we can be of greater service than ever before to our many friends who have contributed to our success

WILLIAM PENN POWERS

. . with his invention of the first all pneumatic system of temperature control and gradual acting vapor disc thermostat made an invaluable contribution to the modern science of heating, air conditioning and industrial process control.

POWERS CONTROL 60th ANNIVERSARY

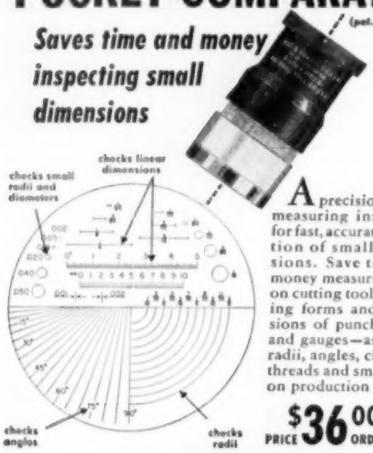
Offices in Over 50 Cities. See Your Phone Book.

BREVITY—Identify by IEN - 9676 if you write the maker

new POCKET COMPARATOR

(pat. applied for)

Saves time and money inspecting small dimensions



A precision optical measuring instrument for fast, accurate inspection of small dimensions. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as radii, angles, chamfers, threads and small holes on production parts.

PRICE $36.00 ORDER TODAY

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NATIONAL TOOL CO.

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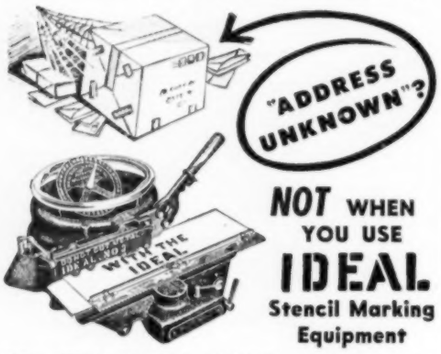
BREVITY—Identify by IEN - 9677 if you write the maker



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IDEAL STENCIL CUTTING MACHINE. Automatic Carriage Return and Word Spacer for fast, accurate stencils . . . visible cutting—see what you're doing . . . Minimum Margin Grip—saves up to 25% on stencil board.

"HANDY A" ANGLE BRUSH

Natural-grip handle . . . Push-button ink feed . . . one-piece, can't leak Aluminum body.

IDEAL STENCIL INK

Complete line of black and colored fountain brush and metal marking inks. Free-flowing, quick-drying.

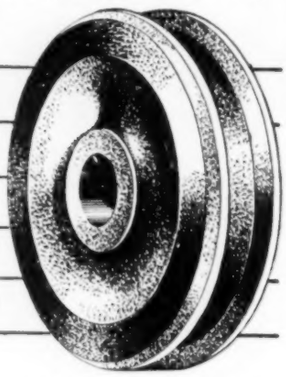
FREE! "IDEAL SHIPPING GUIDE." Valuable shipping dept. tips.

IDEAL STENCIL MACHINE CO.

136 Iowa Ave., Belleville, Ill.

BREVITY—Identify by IEN - 9678 if you write the maker

WROUGHT STEEL CRANE WHEELS by STANDARD



Built for *extra* service by a pioneer producer of railroad wheels, under continuous quality-control from melting of metal to final finishing. Rugged, tough, strong, durable. Available in a range of sizes. Prices on request.

BALDWIN-LIMA-HAMILTON CORPORATION
PHILADELPHIA 42, PA.

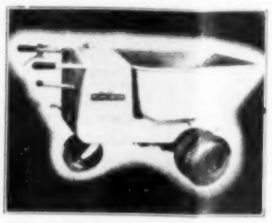
Offices: Chicago, Cleveland, Houston, New York, Philadelphia, Pittsburgh, San Francisco, St. Louis, Washington.

BALDWIN-LIMA-HAMILTON

BREVITY—Identify by IEN - 9679 if you write the maker

TRUCK . . Engine driven dump unit rates ¾ ton with bucket or platform

Source: PRIME-MOVER CO.
51 Sampson St., Muscatine, Iowa



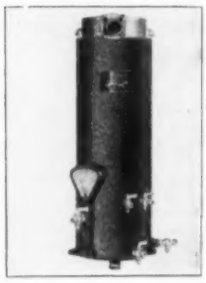
Model 15 is new design of the company's three-wheel utility dump truck, previously described IEN-2447-48. The engine in the new unit has been increased in size over the original design from 3 to 4 hp. and load capacity has been increased from ½ to ¾ ton. The truck takes a 10 cu. ft. dump bucket or a 30 by 44-in. platform deck interchangeably. It travels at a fast walk, will operate loaded up a 20 per cent grade. Weight with the dump bucket is 632 pounds.

The engine is a 4-cycle air-cooled Wisconsin unit connected to the front wheels. The tires can be pneumatic or zero pressure. Overall width is 31½ inches. Turning radius is 33 inches. A special platform is available that measures 42 in. in width by 48 in. in length to employ with the improved truck.

BREVITY—Identify by IEN - 9680 if you write the maker

PAINTING . . Electric heater to supply hot paint to spray guns

Source: RELIABLE PRODUCTS MFG. CO.
125 DeKalb Ave., Dept. 50, Brooklyn 1, N. Y.



Viscolator trade names a new line of electrically-heated units for application in lines carrying paint between a point of supply and an installation of spray guns. It heats the paint to reduce its room-temperature viscosity. It makes possible the spraying of high solid-content lacquer, synthetic and similar coating materials without need for thinners.

Capacity ranges from 8 to 40 gph. with electric heat. The larger units to 250 gph. are available to specification. Heated air can be supplied also for use in the spray guns. Temperature of delivery ranges from 160 to 180 deg. F.

BREVITY—Identify by IEN - 9681 if you write the maker

TRACTOR ATTACHMENTS . . Instruction manual for operator of power towing winch on a tractor

Hyster Co.
2916 N. E. Clackamas St., Portland 8, Oregon

Mechanical description starts new 12-page Form 1184 on the company's Type DTN towing winch for a Caterpillar tractor. This information for the operator is followed by operating instructions, typical winch operating methods and rigging including one to pull a tractor out of the mud by its winch. It concludes with a set of 11 rules as an operating summary.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9682 if you write the maker

A PAID NEWS ADVERTISEMENT BY BYRON JACKSON CO.

BJ SUBETTE PUMP . . .

a smaller version of the highly successful BJ Submersible Deepwell Pump

For over 23 years BJ Submersible Deepwell Pumps have proven themselves in thousands of installations. Now the Subette extends the BJ Submersible application to wells as small as 6" ID. An ideal pump for primary water supply or stand-by use in industrial plants.

Since sealed pump and close-coupled electric motor operate submerged in the well, no expensive pump house or installation is required . . . crooked or extra deep wells are no problem . . . underground location is safe from sabotage . . . no motor floodout during emergency conditions of fire or flood . . . operation is silent, invisible . . . and there is no water contamination from dirt, oil or foreign matter.

The BJ Subette provides capacities to 130 gpm and heads to 765 feet.

Larger BJ Submersible models are also available for greater capacities.

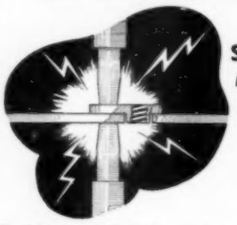
Byron Jackson Co.
PUMP DIVISION
P. O. Box 2017, Terminal Annex
Los Angeles 54, California

OFFICES IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 9683 if you write the maker

OHIO WELD NUTS

For economical Spot Welding



OHIO SN Spotweld Nuts

No retapping required!

Thread sizes in stock (Low Carbon Steel)

No. 6-32 to ⅜-24

Stainless steel sizes made to order in production quantities.

For dependable Projection Welding

OHIO WS Square Weld Nuts

Thread sizes in stock, (Low Carbon Steel)

No. 6-32 to ½-20

No retapping required!
No burning or discoloration!

For samples and welding information, send to

THE OHIO NUT & BOLT COMPANY
604 FRONT STREET BEREA, OHIO

BREVITY—Identify by IEN - 9684 if you write the maker

TIP-TOE CONTROL

ASSURES

TIP-TOP PRODUCTION

. . . especially from women workers!

SIMONDS LINEMASTER, JR. FOOT SWITCH

SIMONDS MACHINE CO. Inc.
50 Sason Road, Southbridge, Mass.

Tip-toe control operates Linemaster, Junior's lightweight switch by momentary contact of toe—while heel rests comfortably on floor! Allows full use of both hands, increases production, prevents accidents, makes work easier. Neat-looking, streamlined, aluminum housing with black crackle enamel finish.

Let us quote on your special switch requirements

WRITE FOR BULLETIN

"LINEMASTER," the Leader!

BREVITY—Identify by IEN - 9685 if you write the maker

Making more steel is hot work!

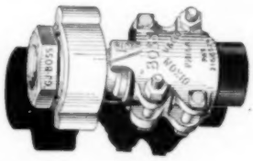
Two-stream Projector with Automatic Stream Control

There's one way to keep steel production at the top—and keep workers comfortable—insure a plentiful supply of cool, refreshing water throughout the plant. In most steel mills, quite naturally, you'll find Halsey Taylor Electric Coolers do the job—and do it better! Extra hygienic features, trouble-proof, economical!

The Halsey W. Taylor Co., Warren, O.

HALSEY TAYLOR COOLERS & FOUNTAINS

BREVITY—Identify by IEN - 9686 if you write the maker



"GJ-BOSS"

GROUND JOINT FEMALE COUPLING, STYLE X-34

For Steam, Air, Water, Hydraulic Hose — High or Low Pressure

Soft-to-hard metal seal provides leakproof, trouble-free connection. Parts — malleable iron or steel, rustproofed. Furnished with "BOSS" Offset and Interlocking Clamps. Deep, smooth corrugations give an excellent gripping surface for hose when clamp pressure is applied. Sizes ¾" to 6".

From Your Hose Supplier or Industrial Distributor

DIXON VALVE & COUPLING CO.

PRODUCERS OF *The Quality Line* COUPLINGS • NIPPLES • MENDERS • CLAMPS

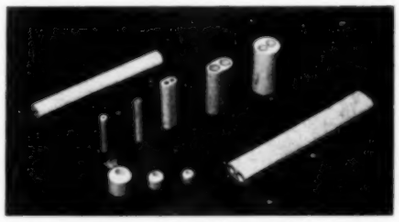
"BOSS" "GJ-BOSS" "DIXON" "KING" "AIR KING" "DIX-LOCK"

PHILADELPHIA, PA. BRANCHES: CHICAGO • BIRMINGHAM • LOS ANGELES • HOUSTON

BREVITY—Identify by IEN - 9687 if you write the maker

THERMOCOUPLE WIRE INSULATORS

Immediate Delivery • 200 Stock Sizes



Made from high grade Ceramic Material. Will withstand sudden heating and cooling. Heat shock resistant material. Very hard and wear resistant.

Single hole, double hole round and oval styles. Special sizes to customers' specifications.

Our new plant equipped with modern machinery enables us to maintain High Grade Electrical Properties and close dimensional tolerances.

No order too small or too large.

Send us your blue print or specifications.

Du-Co Ceramics Company

Du-Co Building **Saxonburg, Pa.**

Manufacturers of Steatite, Electrical and Refractory Porcelain

BREVITY—Identify by IEN - 9688 if you write the maker

"GUARD-A-SEAL" CONTROLS »»

Put jet action into your electrical control design! *Consult* Guardian where many controls, seemingly "Special" in nature, can be produced from more than 35,000 standard Guardian parts. *Consider* the sensational "Guard-a-Seal" units—developed specifically for aircraft and portable equipment—sealed in *aluminum.* Designed to incorporate heavier frames, larger contacts, higher capacity, yet qualified under all AN weight requirements because *the weight is in the relay—not the can!* Write.

GUARDIAN ELECTRIC

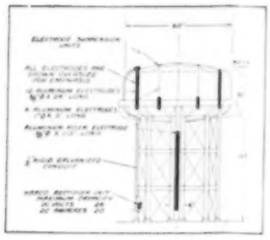
1620-K W. WALNUT STREET CHICAGO 12, ILLINOIS

A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

BREVITY—Identify by IEN - 9689 if you write the maker

CORROSION PROOFING . . Cathodic equipment for water tanks, pipe lines

Source: HARCO CORP.
16936-40 Broadway, Cleveland, Ohio



A rectifier is combined with a transformer to take current from a standard ac. line to supply power for anodes assembled in a metal water tank or tower in new corrosion-proofing equipment. The company also is prepared to supply engineering designs and installation service. In a tank installation the current radiates from the anodes, with water as the electrolyte, to the under-water steel surfaces to oppose electrolytic action.

BREVITY—Identify by IEN - 9690 if you write the maker

EXTINGUISHING . . Trailer assembly carries water tank, pump, hose, ladder

Source: PREAKNESS ENGINEERING CO.
970-74 Broad St., Dept. 10, Newark 2, N. J.

Model PR82250 is a new trailer-mounted assembly of 200-gal. water tank, engine-driven pump, 300 ft. of fire hose with nozzles, a hand extinguisher, a ladder and accessories. The pump can be connected to the tank are used separately.

BREVITY—Identify by IEN - 9691 if you write the maker

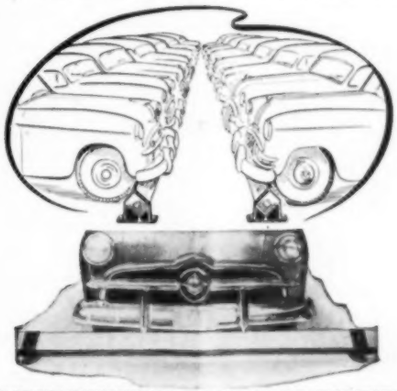
REAMING . . Miniature cutters for holes from 0.0005 to 0.250 inch

Source: WOODRUFF & STOKES
347-51 Lincoln St., Hingham, Mass.

Three types of reamer are available in this new miniature line. They are flat, half round, and straight or spiral fluted. Any can be ground to provide a taper, two or more steps or a combination of taper steps to meet specified requirements. Tolerances are held within 0.0002 inch. Each cutter is ground and honed, is made of carbon steel with heat treatment to provide a hard surface and a tough resilient core.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9692 if you write the maker



SALIENT FEATURES OF HAR-BAR BARRIERS

1. High enough to stop your car.
2. Low enough to clear your bumper guards.
3. Barrier is above ground—no drainage problem.
4. Barrier is above ground—no rotting of wood.
5. Automatically spaces your cars.
6. Follows contour of your ground.
7. Easily installed—just line up and drive the anchor pins.
8. Easily moved—just pull the anchor pins. 100% reusable.
9. Easy to clean under.
10. Easy to maintain.
11. Installed on any kind of surface—black top, cement, macadam, gravel or cinders.
12. It really dresses up your parking lot.
13. You always stop against your tire—no shock.

Send us a plot plan of your parking lot—we do the engineering free.

Harris-Barrier, Inc. 5607 N. PENNSYLVANIA ST. INDIANAPOLIS 5 • INDIANA

BREVITY—Identify by IEN - 9693 if you write the maker

GAIN SPACE. SAVE LABOR.

You should investigate

BATTERY OPERATED WALKIE TYPE PALLET TRUCKS *built by* MOTO-TRUC

Shortie Model Pallet Truck
Capacity: 4,000 lbs.

A FEW OF THE ADVANTAGES: Shortest truck of its type built — operates in narrower aisles . . . Easiest control through exclusive roller type handle . . . Nydegger shackles for smoother travel . . . Safest braking system . . . 12-volt power for heavy duty, higher voltage for extra heavy duty and ramps . . . All-welded steel construction.

Write for Bulletin No. 51

The MOTO-TRUC Co.
7415 E. 96th Street
CLEVELAND 3, OHIO.
Originators and world's largest exclusive manufacturers of motorized, battery operated walkie type trucks

PALLET, PLATFORM, HI-LIFT TYPE TRUCKS AND TRACTOR

BREVITY—Identify by IEN - 9694 if you write the maker

Do you have a tough clamping job?

Whether you need batteries of clamps (like illustrated) or just one or two—whether you clamp tiny parts or huge assemblies requiring nearly 2 tons pressure, there is a Knu-Vise toggle-action clamp for the job.

All Knu-Vise clamps are made for fast, dependable performance, designed to most exacting specifications, based on exhaustive laboratory tests and years of practical use.

Call on our engineers (without obligation) if you want to know whether your clamping is as efficient as it should be.

Would you like one of our new catalogs?

Photo Courtesy Consolidated Vultee Aircraft Corporation

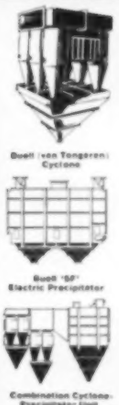
Sales Offices in Principal Cities

KNU-VISE PRODUCTS **LAPEER MFG. CO.**
3060 DAVISON ROAD • LAPEER, MICHIGAN

Western Division • 422 Magnolia Street, Glendale, California

BREVITY—Identify by IEN - 9695 if you write the maker

buell KNOWS DUST RECOVERY



WHENEVER industrial engineers discuss valuable dust recovery, Buell is the big name mentioned. For Buell offers knowledge and capabilities in dust recovery second to none. Only Buell Precipitator recovers ultra-fine dust with "Stedi-flow" dust fall—continuous cycle rapping that means constant peak efficiency. Buell large diameter cyclones do not plug, require next to no maintenance. Complete details on both types of equipment are available. Buell Engineering Co., Dept 22, 70 Pine St., New York 5, N. Y.

buell

Engineered Efficiency in **Dust Recovery**

BREVITY—Identify by IEN - 9696 if you write the maker

PRATER ROTARY AIRLOCK FEEDER

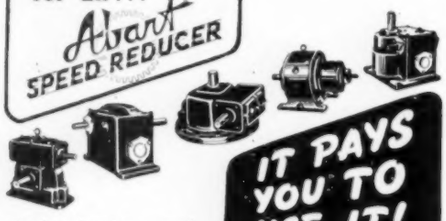
FEEDS powdered and granular products into conveying line—quickly and accurately!
STOPS air leakage at the discharge of dust collectors or other pneumatic equipment!
PRE-DETERMINES rate of feeding material into mixers, blenders, hoppers, etc.
RECOMMENDED in the processing of: Ball Clay, China Clay, Diatomaceous Earth, Kaolin, Grains & Feeds, Graphite, Limestone, Whey Powder, Calcium Carbonate, Sulphur, Fullers Earth, Ochre, Volvanic Ash, Bronze Powder, Bauxite, Carbon Black, Salt, Barium Carbonate, Marl, Sugar, Cocoa, Gypsum, Silica, Manganese Sulphate, Phenolic Molding Compound.

Send for new illustrated bulletin.

PRATER PRATER PULVERIZER COMPANY
1536 So. 55th Court • Chicago 50, Ill.

BREVITY—Identify by IEN - 9697 if you write the maker

You don't pay for an... Abart SPEED REDUCER



IT PAYS YOU TO USE IT!

Good engineering — good design—highest quality materials . . make Abart Speed Reducers a paying investment. It's an investment that pays off in quiet, trouble-free operation, power-saving economies, and extra-long, dependable service. We make more than 75 types of Reducers in spur, worm, or combination—1/50 to 168 HP—ratios up to 10,000 to 1. Send *today* for our informative book on Abart Reducers, containing engineering data and drawings, and a complete list of Reducers available. It will help you solve *your* speed reducer problems!

Abart GEAR & MACHINE CO.
4823 West Sixteenth Street Chicago 50, Illinois

BREVITY—Identify by IEN - 9698 if you write the maker

Electric Heat With a Guarantee!

For OVENS and FURNACES

"Folded-and-Formed" Heating Elements covering entire work area in straight convection oven.

Custom-built insulated plug with "F-and-F" Heating Elements attached, in air circulating oven.

Standard "Folded-and-Formed" racks in batch type air circulating oven.

STANDARD RACKS—1.5 to 7.5 K. W.—made in 12" x 12" sections are used vertically or horizontally, singly or in multiples, to provide any desired total K.W.

CUSTOM-BUILT RACKS available in wide variety of sizes, up to 600 K. W. in one bank.

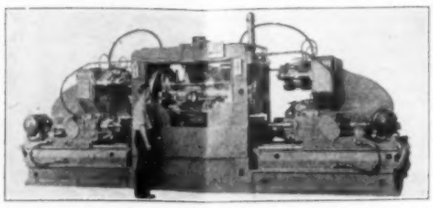
SPECIAL RACKS, up to 10' high by 10' long, with any required K. W. per square foot of surface area.

TRENT INC.
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE PHILA 27 PA

BREVITY—Identify by IEN - 9699 if you write the maker

BORING . . Automatic machine also faces, drills, reams axle housings

Source: GREENLEE BROS. & CO.
1703 Herbert Ave., Rockford, Ill.



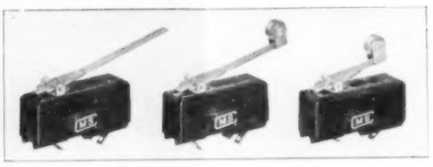
Axle housings are mounted on the six-station indexing head in this new machine for a series of operations at an hourly production rate of 123 pieces. Two diameters are combination bored in each end of the work and the ends are faced. Semi-finish boring operations on the two diameters are completed and holes are drilled, chamfered and reamed in the end flange. Two rear heads drill and thread a breather hole in the side of each housing.

Means to clamp the work have been included to hold without work distortion. For this purpose the housings are located endwise by two manually-operated cams that engage the inside mounting flange. The work is centered by V-clamp blocks. Radial thrust is compensated by two spring-loaded jacks, one at each end, to engage the spring-mounting pads on the work. The machine takes two types of housing that vary in length. Double drilling and threading spindles are provided for use selectively to machine the breather hole in the two positions in which it is presented.

BREVITY—Identify by IEN - 9700 if you write the maker

SWITCH . . Sensitive snap acting, rigid lever, 20 amp. on 110 volt ac.

Source: MICRO SWITCH
30 E. Spring St., Freeport, Ill.



Three designs of rigid actuating lever are employed in connection with the company's Type-A basic design of sensitive snap acting switch in a new Series V. The new design applies where a high-capacity basic switch with lower operating force is needed. The designs include a long straight lever and long and short levers with rollers. The switch is listed by Underwriters' Laboratories for ¾ hp. at 115-volt ac., 1½ hp. at 220-volt ac.

The contacts are single-pole double-throw design with 0.020 in. contact-break distance. Solder lugs, integral screw terminals or side-facing binder-head screw terminals can be specified. Operating force ranges from 2½ to 6 oz. maximum with release force at ½ to 1½ oz. minimum. Movement differential is 0.109 to 0.047 in. maximum with pre-travel at 0.625 to 0.250 in. maximum and over-travel at 0.78 to 0.031 in. minimum for the new switch design.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9701 if you write the maker

No More Frozen or Galled STUDS *(even at 1800 F°!)* Try this Amazing Money Saver..

FREE Test Sample of the NEW FEL-PRO C-5 "HI-TEMP" THREAD COMPOUND

Eliminates Pitting of Stainless and Alloy Steels at all Temperatures!

CUT costly stud breakage, heater dismantling time, pitting of metal surfaces!

We'd like to send you a free sample of the new Fel-Pro C-5 "Hi-Temp" Thread Compound to try on your toughest thread compound problems, including alloy and stainless steels. Then you can see the amazing, money-saving results being obtained by the nation's largest refineries, utilities and process industries. Fel-Pro's exclusive Colloidal-Copper formula keeps metal parts separated, regardless of temperatures. Its neutral action solves the alloy and stainless steel pitting problems. One utility company reports that heater dismantling time has been cut from two days to four hours, by the use of Fel-Pro C-5 "Hi-Temp". Why not see what "Hi-Temp" can do for you . . . get your free sample and complete data sheet—*write today!*

FELT PRODUCTS MFG. CO.
1523 Carroll Ave., Chicago 7, Illinois

3337

BREVITY—Identify by IEN - 9702 if you write the maker

SEND FOR THIS NEW MANUAL —20 pages packed with useful data!

This is a brand new section of the Cerro Alloys Application Data File. Its twenty pages are literally packed with valuable information and illustrations of the Cerromatrix Method of Punch and Die Setting—a method that saves untold costly man-hours of labor in the making of all kinds of metal-working dies: blanking, sectional, progressive, lamination, perforating, combination, compound, pierce and cut-off dies—or what-have-you. Write for your free copy today—on your letterhead, please.

CERRO de PASCO Corporation
(Formerly Cerro de Pasco Copper Corporation)
Dept. 6 • 40 Wall Street • New York 5, N. Y.

BREVITY—Identify by IEN - 9703 if you write the maker

What a

of a DIFFERENCE TRANSALL IDLERS make!

Compare!	Lubricated Idlers	TRANSALL Pre-Lubricated Idlers
Lubrication—Labor	Yes	NONE
Lubricant Cost	Yes	NONE
Belt Damage by Grease	Frequent	NEVER
Friction Factor	High & Variable	LOW & Constant
Grease Fittings	Costly	NONE

TRANSALL Belt Conveyor Idlers offer the greatest advances in design and construction. They are heavy duty idlers, rugged and trouble-free.

Immediate Shipment

TRANSALL INC.
117 North 11th St. Birmingham 4, Ala.
Manufacturers of a Complete Line of Belt Conveyor Equipment

BREVITY—Identify by IEN - 9704 if you write the maker

FLORITE Direct-Reading AIR VELOCITY METER

Available in Two Styles —See Below

- *A practical, accurate air velocity meter for heating, air conditioning, and ventilating work. Indispensable for measuring grille velocities and air deliveries from registers and grilles; for balancing forced air heating systems, and for checking air distribution of all kinds of ventilating systems.*
- *Accurate velocity readings, automatically averaged over a 3" dia. free area, instantly indicated in feet per minute.*
- *Extension handle facilitates positioning of instrument away from the observer for readings in hard-to-reach locations, or where the observer's body would interfere with the normal air movement.*
- *Unique scale lock makes possible to retain scale reading when desired until the lock is released—an indispensable feature where extension rod is used to position instrument away from the observer.*
- *Leather case is furnished as standard equipment for added protection when the instrument is not in use and for convenience when carrying it in the pocket.*

Either of two styles: One with a scale of 0-1000 ft./min., and the other with a double scale of 0-3000 ft./min. and 0-35 miles per hour.

Write for Leaflet 760

BACHARACH Industrial Instrument Co.
7000 BENNETT STREET • • PITTSBURGH 8, PA.

BREVITY—Identify by IEN - 9705 if you write the maker

PITTSBURGH COILS

air pressure tested

Pipe Coils — Bends — Boiler Tubes

Built for your particular needs. Send blue print or rough sketch for Pittsburgh quotation. Also air-pressure tested Welded Headers, Welded Ammonia Receivers, Accumulators, Pipe Coils, Boiler Tubes. "Let us quote!"

Ask for Pipe Coil Data Book

Pittsburgh Pipe Coil & Bending Company
Division of Enameled Metals Company
61 BRIDGE STREET ETNA, PITTSBURGH 23, PA.

BREVITY—Identify by IEN - 9706 if you write the maker

instrumentality with six memories

Now—the Multipoint Capacilog, a direct deflection type strip chart recorder giving up to six variable recordings on one chart has been added to the Wheelco Capacilog line.

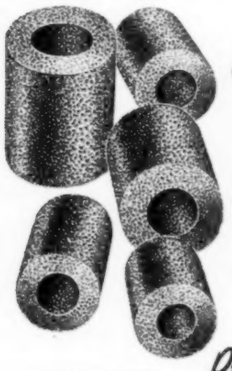
Easy to Read—Easy to Operate—Easy to Service. Has all the latest features of Wheelco Instrumentality.

Write for Bulletin MPC-1. It gives complete details on the Multipoint Capacilog.

WHEELCO INSTRUMENTS COMPANY
845 W. Harrison Street, Chicago 7, Illinois

wheelco electronic controls

BREVITY—Identify by IEN - 9707 if you write the maker



CHICAGO Internal Grinding WHEELS

Rapid Delivery

MANUFACTURED TO ORDER

Chicago Internal Grinding Wheels produce better finishes with longer wheel life and cutting action. They're your best buy—"tailor made" to your specifications and speedily delivered.

Advanced production methods assure you perfectly balanced Internal Wheels to meet rigid finishing requirements. Faster delivery . . . with overnight service for special jobs.

WRITE TODAY for full details on all Chicago Wheel products . . . and *free* sample Chicago Internal Grinding Wheel.

CHICAGO WHEEL & MFG. CO.
Dept. N, 1101 West Monroe St.
Chicago 7, Illinois

PRODUCT INDEX

How to find what you need:

Leaf through the issue with your current needs in mind, noting down those subjects that sound like solutions to your problems as you read the subject headings.

Next use this index to pick up page number references to additional sources on the subjects you have chosen. An asterisk (*) in the index after a number means editorial material.

Now take one subject at a time and refer to the pages you have noted. This time read the editorial descriptions and advertisements in detail. Then write the IEN numbers on which you want further information on your Reader Service Form to send to us, or write the manufacturer direct.

If you have trouble in finding the answer to your current problem through the subjects in this issue, let us know. We can name sources of supply with the help of our eighteen-year index of all products that have appeared in IEN. Any question we cannot answer will be published in our "I Wish I Had" column to invite suggestions.

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TAC does what no other tool can do!

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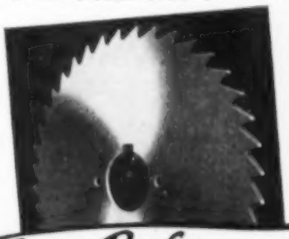

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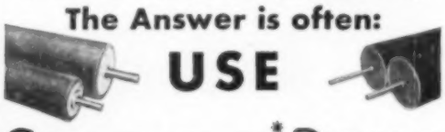

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For Liquid Transfer

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TUTHILL PUMP COMPANY
939 East 95th Street, Chicago 19, Ill.

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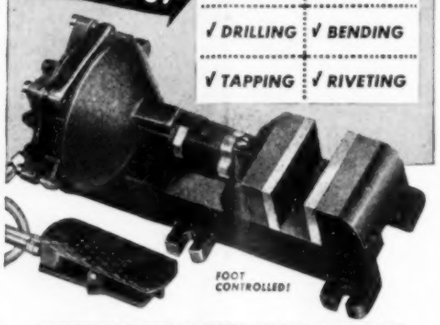
BREVITY—Identify by IEN - 9715 if you write the maker

SPEEDY AIR VISE

SPEEDS UP ✓ MILLING ✓ PUNCHING ✓ DRILLING ✓ BENDING ✓ TAPPING ✓ RIVETING



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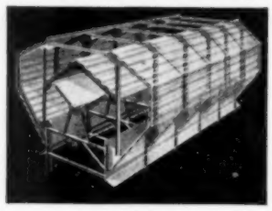

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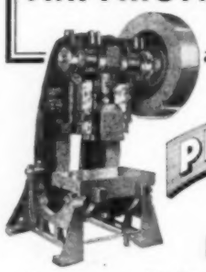

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do them faster...
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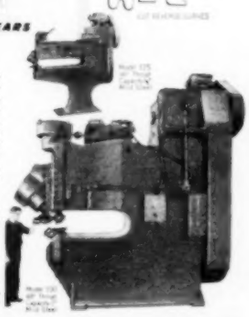
at a lower cost...
with KLING ROTARY SHEARS



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5 BODY STYLES IN 5 PIPE SIZES
WITH OR WITHOUT SPRING RETURN

Styles: 2-way, 3-way and 4-way open-end exhaust. 3-way and 4-way piped exhaust. For controlling air, water, inert gas, vacuum or oil pressures up 175 p. s. i.; temperatures up to 140° F.
Sizes: ¼", ⅜", ½", ¾", 1".

9 "ENDS"
Knob, lever, clevis, cam, foot, treadle, solenoid, cylinder, diaphragm. All single or double.

VALVAIR CORPORATION • 454 Morgan Avenue, Akron 11, Ohio
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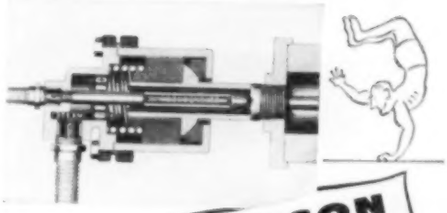
Rely Upon Valvair

BREVITY—Identify by IEN - 9724 if you write the maker

SELF-SUPPORTING



Type S JOHNSON Rotary Pressure JOINTS

It's self-supporting in more ways than one, this Type S Johnson Joint which is used to get steam or liquids in or out of heating or cooling rolls. In terms of dollars and cents its packless, self-lubricating, self-adjusting design has long proved it can pay its way out of savings in maintenance. Now the Type S is physically self-supporting too—ends the threat of misalignment completely. Alert design and production men will want to investigate the possibilities it offers for calenders, dryers, ironers, mills and similar machines.

Write for complete literature

The Johnson Corporation
846 Wood St., Three Rivers, Mich.

BREVITY—Identify by IEN - 9725 if you write the maker

DUST AT $100 AN OUNCE

That's What Concrete "Dusting" Can Cost!

Dust distributed over an assembly bench, or settling in a processing plant, can cost thousands of dollars in rejects, yet it can be prevented with STONHARD STONTOP. Particles that break away from concrete are disastrous to fine craftmanship. STONTOP seals and hardens concrete. Protects it against disintegration. Mail the coupon today. A trial demonstration can be arranged in your own plant.

STONHARD COMPANY
Building Maintenance Materials Since 1922
102 Stonhard Bldg., 1306 Spring Garden Street, Phila. 23, Pa.

Yes, I want details on STONHARD STONTOP. 102/9/51
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BREVITY—Identify by IEN - 9726 if you write the maker

Stearns MAGNETIC PARTS SEPARATOR

for BARREL FINISHING and DEBURRING OPERATIONS

- FAST
- AUTOMATIC
- LABOR-SAVING

The STEARNS Magnetic Parts Separator is the perfect answer for reclaiming steel parts from stones after a tumbling barrel operation or other deburring process.

Cleanly separated through use of a permanent magnetic drum, the parts are demagnetized before being discharged. The non-magnetic stones fall off the end of the vibrating feeder chute, ready for re-use.

For automatic, economic separation of parts from stones, use a STEARNS Magnetic Parts Separator.

Stearns MAGNETIC MANUFACTURING CO.

626 S. 28th Street • Milwaukee 46, Wis.

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OF EFFICIENT CONVEYING SYSTEMS

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THE ALVEY-FERGUSON COMPANY
347 Disney St., Cincinnati 9, Ohio
Offices or Representatives in Principal Cities

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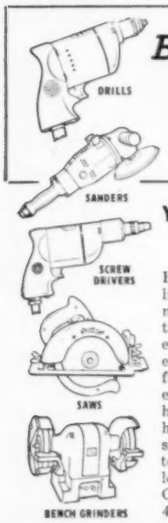

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"I WISH I HAD-"

An IEN reader is waiting for an answer to each item in this column.

This column concentrates upon reader requests for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products.

It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

CORN POPPER . . "I wish we had contact with a manufacturer who can supply us with equipment to pop corn dry, the corn to be used as a cushioning agent for packaging purposes. We are located in San Diego, Calif." **IEN W-61**

FLOOR CLEANING . . "I wish we had knowledge of a manufacturer who can supply us with equipment suitable for cleaning some 5,000 sq. ft. of floor space in one plant, 7,000 in another and 28,000 in a third to remove abrasive dust containing a certain amount of bonding material from the floor. The bonding material makes it impossible to use a wetting agent as this would make the floor extremely slippery. A revolving brush and vacuum type cleaner combined is not satisfactory as we find that the brush creates a dust hazard and the abrasive dust on the floor subjects our equipment to extreme wear. Due to the size of the areas to be cleaned, the equipment should be large enough for the employee to ride and move forward at a rate of about 3 mph." **IEN W-62**

NEW PRODUCT . . "I wish I had contact with a manufacturer interested in adapting my patent pending process for manufacture of hollow metal flush doors." **IEN W-63**

NEW PRODUCT . . "I wish I had contact with a manufacturer interested in developing my patented centrifugal equipment for production of powdered metal products such as brake drums, cylinders, flywheels, gyroscope parts." **IEN W-64**

SURPLUS . . "I wish we had a buyer for 2,000 jet pump motors rating ¾ hp. for operation on 110-volt 60-cycle single-phase ac. at 3,400 rpm. They are flange mounting design with a stuffing box and overload protection. The stock is in Ft. Wayne, Ind." **IEN W-65**

SURPLUS . . "I wish we had a buyer for 1,000 ft. of cold-drawn seamless-steel tube measuring 5 in. od. by $\frac{7}{16}$-in. wall by 10 to 14-ft. lengths. The material is low-carbon steel. The stock is in Grand Rapids, Mich." **IEN W-66**

SURPLUS . . "I wish we had contact with an individual or concern requiring some 15,000 cylindrical cardboard cartons, measuring 4.2 in. in diameter by about 21 in. in length. They are painted black on the outside, are slightly greasy on the inside. The stock is in Fairfield, Ill." **IEN W-67**

BREVITY—Identify by IEN - 9729 if you write the maker

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with DEBOTHEZAT

VERTICAL DISCHARGE ROOF VENTILATORS

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American Machine and Metals, Inc.
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BREVITY—Identify by IEN - 9730 if you write the maker

SIMPLER FLOW MEASUREMENT in the palm of your hand

NEW! MERCURY-LESS!

FOXBORO DIFFERENTIAL PRESSURE CELL

Simplify troublesome flow problems . . . especially where corrosion is a factor or the use of mercury is objectionable. This unique flow measuring device — the Foxboro d/p Cell — reduces installation and operating costs, combines measurement and transmission in one simple, compact unit.

OUTSTANDING FEATURES

- *Uses no mercury*
- *Zero Displacement*
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WRITE FOR BULLETIN 420. The Foxboro Company, 429 Neponset Avenue, Foxboro, Mass., U.S.A.

FOXBORO Reg. U. S. Pat. Off. ACCURATE FLOW MEASUREMENT

BREVITY—Identify by IEN - 9731 if you write the maker

Give him a better driver to do a better job

Workers are more efficient when they're using the best tool for the job. And in the complete Stanley line you'll find an outstanding driver for every industrial need. Each Stanley driver has carefully tempered blade for maximum toughness . . . large, comfortable handle . . . accurately crossground tip. See your distributor. Insist on screw drivers and other Stanley tools for industrial use. Stanley Tools, New Britain, Connecticut.

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HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

BREVITY—Identify by IEN - 9732 if you write the maker

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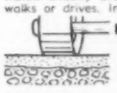
HARD MASTIC
BONDS PERFECTLY — NEVER COMES LOOSE
NO CHIPPING REQUIRED

install directly over your old concrete, wood, brick or stone floors, walks or drives. Interior or Exterior.



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WATERPROOF • RESTFUL
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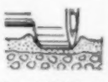

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